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# USSR Report

AGRICULTURE

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## USSR REPORT AGRICULTURE

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MAJOR CROP PROGRESS AND WEATHER REPORTING

WHEAT VARIETIES SUITABLE FOR SIBERIA SOUGHT

Moscow IZVESTIYA in Russian 11 Sep 84 p 2

[Article by Z. Aleksandrova, A. Illarionov and V. Kuleshov, Omsk, Novosibirsk, Barnaul: "A Variety for Siberia"]

[Text] When the article was being composed according to available data as of 10 September on the fields of Altay Kray grains had been harvested on an area of 3,000,000 hectares and threshed on 2,200,000 hectares. In Novosibirsk Oblast grains have been cut and threshed on 1,200,000 and 700,000 hectares respectively; in Omsk Oblast-- on 1,962,000 and 1,610,000 hectares.

In the fields of Western Siberia the harvest is in full swing. Now there isn't a single grain farmer here who does not look with alarm at a dull sky, wondering whether clouds will be coming from the north. For the plowman September is important for the first 10 days. If harvesting occurs later than that an underproduction of many quintals of grain is possible.

This type of thing happened during those years when yield was 6-7 quintals per hectare and it happens now when the best enterprises of the Omsk Irtysh region and Altay and Novosibirsk oblasts harvest 2-3 times more and when crops on bare fallow provide truly Kuban'-like harvests of 40 and even 50 quintals of grain per hectare. The higher productivity is, the greater the significance of the war against losses.

For example, 1972 was productive for Siberian farmers, but also unusually difficult--lodged grains and bad weather during the fall prolonged the harvest period. Specialists calculated that underproduction during that year and during the preceding 15 years in Altay Kray alone exceeded 8 million tons. This figure reflects only the losses incurred just because the Siberian farmer did not have the wheat variety that answered the zone's climatic conditions. Time passed. Has anything changed?

Omsk farmers reminded us of 1979--also a highly productive and favorable year. But that fall in Komsomol'skiy Sovkhoz alone snow covered wheat crops on over 5,000 hectares. That was not due to the fact that people worked poorly, that there was a shortage of technology or that harvesting operations were poorly organized. The reason is a different one. Agronomists from the enterprise

became interested in the Omskaya-9 wheat variety, which was very popular then and which yielded up to 40 quintals of grain per hectare on fallow during a good year. In order to make sure that the usual July rains came at the time when ears gathered strength, the wheat was sown 1-1.5 weeks later than usual. It did not worry agronomists that the vegetative period for Omskaya-9 lasted up to 115 days. If the summer was a warm one and fall was late then the enterprise had a good harvest. But a cool summer hindered the development of the plant, and the Komsomol'skiy--this grain giant within the oblast, which never before had sacrificed grain to either rain or snow, finished harvesting operations with great losses.

"It was then that we decided that we had taken enough risks," said the sovkhos director, D. Solov'yev. "We began to sow at two different times using two varieties--average maturation and average late. For everything, as we say, there is an occasion in life."

Unfortunately, after viewing fields in Novosibirsk and Omsk oblasts and Altay Kray we became convinced that conclusions from past lessons have not been drawn everywhere. This year's drawn-out spring delayed sowing and grain maturation by about 10 days, if not more. On many fields wheat was still green. In the Transvolga or the Ukraine there would be no problem concerning these 10 days. But here in Siberia, grain farmers could not but be alarmed--it is September and there is still little grain on the threshing floors of enterprises--the main harvest period still lies ahead.

It appears even stranger that grains are harvested primarily by means of the two-stage method, although every machine operator knows that direct combining accelerates the course of harvesting by a factor of at least 1.5.

"Wheat, especially Omskaya-9, has not matured everywhere," explained the deputy director of the agricultural administration of the Omsk Oblast executive committee, A. Lavrinenko. "Even the oblast's virgin south has been forced to pile up grain crops immediately upon maturation. This is why nothing is left for direct combining."

Let us note that in Omsk Oblast alone over 700,000 hectares--over half of the acreage in spring grains--are occupied by this variety, and many enterprises have allocated up to 90 percent of their wheat fields to it. No, we are not against Omskaya-9. Developed by specialists of the breeding center of SibNIISKhoz [Siberian Scientific Research Institute of Agriculture] and reproduced in record time, this wheat surpasses the famous Saratovskaya-29 in grain quality and productivity. It is no accident that it became popular among grain farmers south of the Trans-Siberian Railroad--from Kustanay to Krasnoyarsk--where it has been sown on more than one million-hectare section. But...

"Wheat suits everyone," agrees A. Draylikh, chairman of Kolkhoz imeni Engels of Sherbakul'skiy Rayon, "as long as it is the late-maturing type. Frequently we continue to harvest beyond 10 September. But one finds bad weather at this time here. We Siberians need a variety which we can begin harvesting on a large scale by 20 August. Then there will be no losses. It also would not

be bad to have partner-varieties so that we could sow and harvest without risk at two separate times during the year. We have found such varieties for ourselves, albeit with great difficulty."

Maneuvering with varieties helped the enterprise today too--on kolkhoz fields harvesting is practically over. We will say directly that the structure of the spring field here is non-traditional for Siberian enterprises--4,100 hectares are occupied by Sibakovskaya-3 and only 2,000--by Omskaya-9.

"Sibakovskaya-3 matures 8-10 days earlier than Omskaya-9, but in productivity and quality under our conditions it even surpasses Omskaya-9," explains the chairman about this ratio.

Everyone should work with varieties in this manner. But we witnessed examples of a different type too. In Kolkhoz imeni Zhdanov, Pavlogradskiy Rayon, Omskaya-9 occupied 10,000 hectares out of 12,000. In the fields it looked good--the ears were heavy and dense. But in some places, especially on the edge of fields, crops are still depressingly green.

"Oh, swathes from this kind of wheat, and in August," laments A. Nekrasov, link leader. "That would be a harvest!"

It is easy to understand the attitude of both happiness and alarm with regard to grain. And can we blame the grain farmer for the not thoroughly-thought-out selection of varieties if there is basically no selection to choose from? In the Altay, Irtysh region and the Baraba steppe region we heard the same thing from farmers again and again:

"In this sense little has been done for the Siberian grain industry. Breeders are fighting primarily for grain quality and productivity. But in Siberian conditions the regional suitability of a variety is no less important."

Here agricultural science still owes a great deal to grain farmers. Siberian breeders are working with 10 varieties of spring wheat alone. But no matter which one you take--Mil'turum-553, Tsezium-111, Omskaya-9, Irtyshanka-10, Sibakovskaya-3, Vega, Novosibirskaya-67 and other varieties of spring wheat that are well-known in the Transurals, the Altay region, the southern forest-steppe and the steppes of Western Siberia and Kazakhstan--all of them are late-maturing or of average maturation at best. There is not a single early variety.

Of course it is not an easy task to develop an ideal variety. However, it is precisely in this area that there is lack of progress in the breeding centers of SibNIISKhoz and in the Altay and Krasnoyarsk NII [Scientific Research Institutes].

For example, the grain farmers of Novosibirsk Oblast were interested in new wheats such as the Lyutestsens-57 and Irtyshanka-10 varieties. But here too the duration of maturation was not pleasing. Thus two-thirds of wheat fields in the oblast--the main part of the forest-steppe--are occupied by the Novosibirskaya-67 variety.

"If we assume that with its introduction the problem of an average-maturing variety for the forest-steppe zone of Western Siberia has been solved," said department director V. Zhukov of the Institute of Plant Growing of SO [Siberian Department] of VASKhNIL [All-Union Academy of Agricultural Sciences imeni V. I. Lenin], "then we can say that the problem of developing an early variety for the northern region still remains to be solved."

We visited breeding plots of land with the director of a group breeding early wheat varieties, N. Vavenkov. We were convinced that winning those 10 days from nature by means of more rapid maturation, the need for which was clearly demonstrated by this year's harvest, was a task that was within the realm of possibility. However, while a plant might acquire the characteristic of early maturation it would probably lose other valuable properties.

Test plots of land can illustrate this well. Most of the "numbers" which were promising during last year's dry summer this year could not withstand thunderstorms and wind--they lodged. Still, there are some plots where the wheat managed to remain upright. This inspires the conviction that the early variety is a reality of the near future.

But the problem concerns not just one variety, but rather the selection of wheat varieties for all zones in Siberia in order to provide the possibility to maneuver. This would enable us to plan the maturation schedule for every zone and enterprise and to carry out harvesting operations in a planned manner. In order to achieve this goal SibNIIRS [Siberian Scientific Research Institute of [Further expansion unknown]] has developed a comprehensive program called, "Siberian Wheat." Experts from among the most well-known breeding centers in the country have been recruited to deal with the problem. This is promising. But meanwhile...We have become convinced that the grain farmers of many enterprises do not even utilize those possibilities that exist.

In Omsk Oblast, for example, in steppe and southern forest-steppe zones it is planned to allocate up to 10 percent of acreage to durum wheat, but right now it occupies only slightly more than 28,000 hectares--somewhere around 2 percent of the total. This is the case despite the fact that several years ago breeders of SibNIISKhoz developed an excellent variety of durum wheat--Almaz. Sosnovskoye OPKh [Experimental Model Farm], Tavricheskiy Rayon, where Almaz is sown on up to 30 percent of wheat fields, has supplied the state with about 8,000 tons of high-class grain during 3 years of the five-year plan and has received 776,600 rubles in the form of price supplements. However, such enterprises are unique in both Omsk Oblast and Altay Kray. Some enterprises do not want to burden themselves with additional concerns whereas others do not have possibilities.

"In order to maneuver with ratios of varieties depending on the year's weather conditions, it is necessary to have emergency reserves of seed of every variety that is cultivated at a rate of about 50 percent of need," S. Leont'yev, docent of the Omsk Agricultural Institute, told us.

This is also not a new problem. Specialists see a solution in the transition of seed farming to an industrial base. But how is this to be done if the



enterprises of Minsel'khoz mash [Ministry of Agricultural Machinery] are not hurrying to assimilate a group of machines to equip model complexes that will be processing and storing seed ? Thus, enterprises that are called upon to supply kolkhozes and sovkhoses with quality seed of high reproductions cannot complete their plans. As a result, in the Altay up to 10 percent of sowing area is sown in seed of non-regionalized varieties, 2-3 percent--in non-conditioned seed and one-fifth--in seed of distant reproductions. Because of this every hectare of Altay plowland produces 2-3 quintals of grain less than it could.

The reserves of Siberian fields are great. Grain farmers told us about them at the height of harvesting operations. This is satisfying. This means that the lesson is being conceptualized. Now the most important thing is to take the grain that has been raised with such difficulty, to remove the harvest completely, leaving nothing to bad weather during the fall or to the coming snow. Siberian farmers know how to do this; they know how to pass the most difficult test of the year with honor.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### INDUSTRIAL SEED PRODUCTION SYSTEM FOR BURYAT ASSR

Omsk ZEMLYA SIBIRSKAYA, DAL'NEVOSTOCHNAYA in Russian No 10, Oct 84 pp 19-20

/Article by V.M. Osodoyev, chief of the Department of Seed Production of the Ministry of Agriculture for the Buryat ASSR and V.I. Osipov, head of the Department of Plant Breeding and Seed Production of the Buryat Scientific Research Institute of Agriculture: "Stability for Grain Crop Seed Production"

/Text/ Since 1982 the republic's farms have been introducing zonal farming systems into operations which were developed by scientists at the Buryat NIISKh /Scientific Research Institute of Agriculture/ and the Buryat SKhI /Agricultural Institute/ and also by kolkhoz and sovkhos specialists of the MSKh /Ministry of Agriculture/ for the Buryat ASSR. These systems are based upon the introduction of scientifically sound soil-protective crop rotation plans having brief rotations, upon an increase in the proportion of clean fallow to a republic average of 20 percent (with fluctuations by zones from 14-15 to 24-25 percent), upon growth in the proportion of grain forage crops and other measures. The carrying out of this work made it possible for the Buryat ASSR to raise considerably its grain crop yields (11.6 quintals per hectare in 1982 and 12.8 in 1983) and its grain production to 600,000 tons. True, it should be noted that the weather conditions in 1982-1983 were more favorable in terms of the precipitation which fell and yet the heat deficit amounted to 180-230° Centigrade (for overall heat resources of 1500-1800° Centigrade higher than +10° Centigrade). But the problem is not simply one of precipitation. We consider an increase in the fallow fields (from 12.9 percent in 1977 to 20 percent in 1982-1983) and the sowing of new varieties to be the principal factors for bringing about positive changes in farming throughout the republic.

In recent years the plant breeders of the Buryat NIISKh (A.G. Dubrovskaya, Yu.M. Ovchinnikova and F.Ya. Dudnikova) have created and regionalized highly productive varieties of spring wheat which differ from the old Onokhoyskaya-4 variety in terms of a number of positive properties. Their degree of shattering is much less, they do not lodge under yields of up to 50 quintals per hectare (Buryat-34) or they lodge considerably less (Buryat-79), they utilize mineral fertilizers to a better degree, they have larger grain (weight of 1,000 grains -- 45-50 grams), they are regionalized both in the Buryat ASSR and in Chita Oblast and they are being introduced into production at an intensive rate. In 1983 they occupied approximately 143,000 of 215,800 hectares in the Buryat ASSR and in 1984 -- 160,000 of 190,100 hectares of wheat sowings.

These varieties are furnishing 30-40 quintals of grain per hectare on many farms. In 1982 and 1983, at the Ivolginskoye OPKh [experimental model farm], a yield of 41.7-42.7 quintals per hectare was obtained over considerable areas. In 1983 the Rodina Kolkhoz in Mukhorshibirskiy Rayon obtained 28.9 quintals of grain per hectare, including 30 quintals of Buryatskaya-34 wheat per hectare and from a plot of 250 hectares -- 41 quintals per hectare. At the Ulyunskiy Kolkhoz in Barguzinskiy Rayon, 32 quintals of Buryatskaya-34 wheat were obtained from an area of 418 hectares. Many such examples could be cited for other farms throughout the republic.

These two varieties, which were sown only in the Buryat ASSR and which provide a minimum increase of 3.0 quintals per hectare, furnished approximately 42,900 additional tons of grain at a cost of almost 5.5 million rubles. This represents a real contribution towards solving the Food Program. It is interesting to note that in 1982 these two wheat varieties occupied 234,000 hectares in Chita Oblast and in 1983 -- 266,000 hectares.

Buryatskaya-34 and Buryatskaya-79, if their potential is to be realized, require good soil fertility and somewhat earlier sowing periods. This applies particularly to Buryatskaya-34, since this variety unfortunately has a rather long growing season (the maximum permissible for the Trans-Baykal region). The large grain of the new varieties makes it possible to employ sowing norms on the order of 3-4 million seeds per hectare.

The situation with regard to grain forage and pulse crops is even worse. The oats varieties Sel'ma, Onokhoyskiy-547, Udych-Zhulty and Gerel have been regionalized in the republic. Of these varieties, only Sel'ma is capable of furnishing yields close to those being obtained from Buryatskoy-34 and Buryatskoy-79, but only in the presence of good soil fertility and good moisture. However, the agricultural practices for this variety have still not been mastered and thus the republic's farms, even during the 1982-1983 period, failed to obtain good yields. And the agricultural practices do not involve any special secrets. Sel'ma requires more moisture and nutrition and earlier sowing than do other varieties. The absence of good oat varieties and shortcomings in the production of seed for this crop explain to a considerable degree why wheat continues to predominate in the grain crop sowings.

True, the question might arise as to why a yield of 30-40 quintals per hectare is needed when the average yield for the republic as a whole is slightly more than 10 quintals per hectare. Would it not be better to have varieties which would guarantee 15-20 quintals per hectare? Such a point of view prevails among a portion of the agricultural workers. We consider it to be wrong. First of all, under the extreme conditions found in the Trans-Baykal region, the yields to a certain extent will depend upon the weather conditions and upon the level of the agricultural practices, since its creation requires a definite minimal amount of moisture, nutrition and other factors. And it would be unrealistic to assign the task of creating a variety which annually produces a yield of a definite level. Secondly, a ceiling must not be established that would restrict the work of the plant breeders or restrain progress. Moreover the new varieties must be the equal of the old ones in terms of severe drought conditions and low soil fertility and they must surpass them sharply under favorable conditions and produce on the average higher grain yields. It bears mentioning that Buryatskaya-34 and Buryatskaya-79 are not inferior to the



Onokhoyskaya-4 variety, which is well known for its drought resistance and which is considerably superior during relatively favorable years, a point which was convincingly borne out by the experience of 1982 and 1983. And yet the Sel'ma oats variety does not possess this characteristic.

Work carried out in recent years has made it possible to improve considerably the production of seed for grain crops. The sowings of regionalized varieties increased during 1984 to 65 percent. This is considerably higher, for example, than the 1980-1981 period and yet it is completely inadequate for a complete conversion over to sowing only regionalized varieties. A great amount of work still remains to be carried out. A network of seed production farms has been created in the Buryat ASSR using nine specialized seed farms. They must produce 17,300 tons of seed of the 2d and 3d reproductions, of which amount 3,000 tons will be sold to eight kolkhozes and sovkhoses in the northern regions and to seven fishing kolkhozes, with 14,300 tons to be added to the state resources. In addition, 24 more farms must produce 26,600 tons of seed, of which 1,700 tons will be added to the state resources and 24,900 tons supplied to kolkhozes and sovkhoses which are unable to provide their own seed.

For the 11th Five-Year Plan, the plans call for 43,900 tons of commodity seed to be produced annually on these farms (excluding elite and 1st reproduction), against an overall requirement of 150,000-160,000 tons (excluding the insurance fund). The planned production of seed at spetssemkhoses /specialized seed farms/ and semkhoses /seed farms/, with the exception of 3,000 tons, is essentially the insurance fund. However, each farm, in all zones including the arid zones, will produce the principal quantity of grain crop seed independently during the current five-year plan. Only the production of seed for the northern and fishing farms and the insurance fund, the size of which, judging from the actual seed deficit during dry years, is clearly inadequate, will be converted over to an industrial basis.

Such a humble beginning for the conversion of seed production for grain crops over to the new system is explained by many factors and particularly by the need for creating a material base, the construction of modern seed processing complexes and the gradual reorganization of the existing farm organization and specialization. The main work concerned with concentrating the production of the principal quantity of grain crop seed in rayons and on farms having better soil-climatic conditions must be carried out during the next five-year plan. In addition to an expansion in the network of specialized seed farms, this also requires increased specialization for them.

Of the 72,100 hectares of arable land at existing specialized seed farms, 38,000 hectares or 52.7 percent are occupied by grain crops. No less than 38,000-40,000 tons of seed can be produced on this area and 27,000-28,000 tons sold (and not 17,300 tons according to the plan). But this is possible only upon the condition that the specialized seed farms will not produce forage grain and that they will be supplied with the required quantities of mixed feed or forage grain from the state resources or from farms not engaged in seed production in exchange for seed grain. At the present time, even the OPKh of the Buryat NIISKh is forced to use a large quantity of high grade grain for feed, since the exchanging of it for mixed feed or the sale of mixed feed for it has not been organized.

The conversion of seed production over to an industrial base is being restrained, as indicated above, by a weak logistical base not only for the specialized seed farms but also for the primary echelon. Up until now, the OPKh of the Buryat NIISKh has not had modern cleaning-drying complexes. It is for this reason that the cleaning and drying of the seed is being dragged out, with the work being carried out during the winter at very low temperatures, which certainly is reflected in the quality and quantity of the seed produced.

Another important measure for achieving stability in the management of seed production operations in the Buryat ASSR is that of creating insurance seed funds in the required amounts. Actually, our rayons and farms which have good natural conditions are also subject to droughts and other natural calamities, as a result of which grain production fluctuates considerably from year to year, although to a considerably less degree than in rayons having worse conditions. The insurance funds created during favorable productive years must compensate for the shortfalls in seed at specialized seed farms during unfavorable years.

Professor G.V. Gulyayev (1982), the chairman of the Coordination Council for Industrial Seed Production of the USSR MSKh /Ministry of Agriculture, has recommended the creation at specialized seed farms of insurance funds in the amount of 100 percent of the quantity of seed required for farms in the zone being serviced. Only in this instance will the ability to make seed available to farms engaged in the production of bread and forage grain be completely stable. In particular, such quantities for the insurance funds are required during the first stage in the establishment of industrial seed production. In the absence of an adequate insurance fund of seed for regionalized varieties, the republic will be forced during dry years to import once again from other oblasts less productive seed for non-regionalized varieties.

A most important measure for raising the stability of seed production is that of introducing into operations at the specialized seed farms (and on farms having organized seed production operations) an entire complex of agrotechnical measures for combating drought conditions. In addition to irrigation, these measures include a scientifically sound proportion of well cultivated fallow land, adequate quantities of fertilizer, optimum sowing periods and all other factors which serve to raise the seed yields.

The seed of certain pulse crops is deserving of mention. Each year the republic experiences a tremendous deficit of seed for peas, vetch and alfalfa. The requirement for pea seed alone, taking into account its cultivation for feed purposes, amounts to 22,000-25,000 tons. Experience has shown that the republic is incapable of producing such a quantity of seed for this crop annually or in a stable manner. The RSFSR MSKh /Ministry of Agriculture/ must be asked to organize the production of the needed pea and vetch seed for our republic in other oblasts of the RSFSR (which have favorable conditions for the cultivation of these crops), in the form of inter-oblast specialization. A similar approach is required for alfalfa, the seed of which quite often does not ripen for us owing to a shortage of heat. It bears mentioning that the need for inter-oblast specialization in the production of seed for certain crops was called for in the 4 November 1976 decree of the CPSU Central Committee and the USSR Council of Ministers entitled "Measures for Further Improving Plant Breeding and Seed Production for Grain, Oil-Bearing Crops and Grasses."

A most important indicator of successful operation of a seed production system is the accelerated introduction into operations of new varieties. This is dependent mainly upon the ability to obtain maximum multiplication ratios for the seed (ratio of the yield of quality-standardized seed to the sowing norm). For carrying out strain changing over a period of 3-4 years, the average multiplication ratio must be not less than 10. In order to achieve such an indicator under the conditions found in the Buryat ASSR, the seed sowings for new varieties must be carried out only on the best soils and with optimum dosages of mineral fertilizer being applied. The sowing norms for new varieties reproduced must be lowered. During tests carried out at the Buryat NIISKh, the spring wheat varieties Vuryatskaya-34, Buryatskaya-79 and Buryatskaya-94, for sowing norms of from 2 to 6 million germinative seed, furnished yields which were higher than that obtained from a sowing norm of 3-4 million. However, for a sowing norm of 2 million, the multiplication ratio was 39 and for a sowing norm of 6 million -- 13. Even if the yield was only 15 quintals per hectare, then for a sowing norm of 2 million the multiplication ratio would equal 17 and for a sowing norm of 6 million -- only 5.

The seed breeding plots must be sown at the beginning of the optimum sowing period for each crop. A sowing that is too early can lead to a reduction in the multiplication ratio and a late sowing -- to the non-ripening of the seed owing to a shortage of warmth, to a reduction in its yield qualities, to seed damage caused by autumnal frosts and thus to a greater reduction in the quantity and quality of the seed. If the ripening of the grain crops is delayed, it is recommended that senication be carried out; this accelerates the ripening process by 5-7 days. Senication is carried out using the aviation method and ammonium nitrate in a dosage of 20 kilograms per 100 liters of water per hectare. This work should be carried out during the phase when 30-40 percent of the plants are in the waxy and approximately 50-60 percent in the pasty stage of ripeness.

In the case of seed sowings, special attention must be given to the harvesting technology. Varieties which are susceptible to shattering, such as Onokhoyskoy-4, and sowings which ripen on an irregular basis or are badly contaminated, are harvested using the two-stage method as a rule. The sowings of varieties which do not shatter, which ripen in a timely manner and which are free of weeds, as a rule are harvested by means of direct combining.

Usually the cutting down of grain crops is carried out during the middle and towards the end of the period of waxy ripeness, when the grain moisture content is 25-30 percent. However, when the ripening is delayed and when there is a real threat of grain damage caused by autumnal frosts (as a rule, such grain is unsuitable for seed purposes), the crop is harvested earlier: the mowing is carried out towards the end of the pasty ripeness phase, when the grain moisture content is 35-40 percent. At the Ivolginskoye OPKh, in 1982, one field of wheat was cut down at the end of the pasty ripeness phase and the beginning of the waxy ripeness phase (grain moisture content was approximately 40 percent) and the grain obtained was suitable for seed purposes. True, when the harvesting is carried out during this period the grain can have a lowered weight (and thus harvesting at this time is viewed as being an extreme measure) but it is still suitable for seed purposes. On this same farm, a similar tract of wheat on which the plants were also at the end of the pasty ripeness phase

was allowed to ripen further for a period of 12 days. Whereas the first plot produced grain weighing 46 grams and having a germinative capacity of 88-90 percent, in the latter case, that is, when the plants were allowed to stand for an additional 12 days, the yield was almost 10 quintals per hectare lower and the grain -- unsuitable for use as seed.

Thus the new industrial system for seed production, assuming it is properly organized and taking into account all of the conditions of modern science, will make it possible, even under the extremely unfavorable conditions found in the Buryat ASSR, to organize the stable production of the needed quantities of seed.

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MAJOR CROP PROGRESS AND WEATHER REPORTING

SEED SITUATION FOR 1985 CROP IN KAZAKHSTAN

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 19 Sep 84 p 1

[Editorial article: "Seed--Guarantee for the Harvest"]

[Text] On the fields of Kazakhstan harvesting is coming to a close. Right now village workers are directing their primary efforts at harvesting the entire crop on time and without losses and at sending it to state granaries. But while harvesting today's grain they at the same time are laying the foundation for the future harvest.

In speaking about the immediate tasks of the republic's farmers, Comrade D. A. Kunayev, member of the Politburo of the CPSU Central Committee and first secretary of the Central Committee of the Kazakhstan CP, emphasized, at its 14th plenum, "Daily concern should be demonstrated about the fate of the future harvest. In addition to carrying out harvesting and procuring feeds it is necessary to prepare late-fall plowed fields on schedule and with quality, to treat fallow fields in a business-like manner, to complete the sowing of winter crops at the optimal time and to develop a high-quality seed fund."

In the village it has been apparent from antiquity that after threshing grain a good manager first stores seed. After all, people have not said, "The harvest begins with the seed," for nothing. The level of gross yield of grain and other products in 1985, the final year of the 11th Five-Year Plan, depends to a decisive degree on the schedule and quality of preparations of seed material now.

This year Kazakh farmers must store 3,284,000 tons of spring-crop seed. A considerable amount has already been done. Today the republic's kolkhozes and sovkhoses have been able to store 2,866,000 tons, or 87 percent of the plan, despite the intensive harvest period. As in previous years, a good example is being set by the workers of virgin regions. The first to fulfill their quotas here were farmers of Tselinograd and North Kazakhstan oblasts. Farmers of Kokchetav and Turgay oblasts are completing the storage of seed. But Pavlodar farmers are lagging behind although the pace of harvesting in the oblast is an adequate one.

The enterprises of Ural and Aktyubinsk oblasts are obviously lagging behind in the procurement of seed material although they have already completed the harvesting of grains. What is the reason for this? Here some RAPO councils

and party and soviet organs have let this matter move along on its own. But here a number of sovkhoses and kolkhozes do not supply themselves with quality seed from year to year and are forced to import it from neighboring rayons and oblasts.

Previously there was a constant shortage of sowing material in Dzhambul Oblast. However, recently the party rayon and oblast committees have begun to give the most serious attention to this problem and to make strict demands of negligent parties. The situation did change. Now for the first time the oblast procured the complete quantity of spring-crop seed in a short period of time.

The farmers of Taldy-Kurgan Oblast supplied themselves with seed ahead of time. Alma-Ata Oblast differs in this regard. Here about 35,000 tons of seed instead of the planned 53,000 tons have been stocked, which is only about two-thirds of the required amount. This type of low indicator cannot be justified by anything. An especially alarming situation has developed in Dzhambulskiy, Iliyskiy and Kurtinskiy rayons. If immediate and effective measures are not taken farmers here will have to ask their neighbors for help.

In stockpiling seed, Kazakhstan's farmers today are giving preferential treatment to varieties and hybrids that are capable of producing the largest yield under conditions specific to the zone, rayon or enterprise and of withstanding the unfavorable characteristics of the environment. The country's breeders, including those in our republic, have recently developed many highly productive varieties of wheat, rye, barley, millet, rice and corn. However, their development is just one side of the coin. On the other hand it is no less important to reproduce the new varieties quickly and to introduce them on the fields of kolkhozes and sovkhoses, where their true value and the effectiveness of the work of breeders are determined.

In addition to the Saratovskaya-29 variety, which has proven itself well, strong and durum wheat varieties Tselinnaya-21, Omskaya-9, Bezenchukskaya-139 and Zhigulevskaya are becoming more and more at home on the fields of Kokchetav, Kustanay and Tselinograd oblasts. In North Kazakhstan Oblast durum wheats Altayka and Almaz are undergoing testing successfully. Farmers of the Transurals recently made a transition to the sowing of highly productive millet varieties--Saratovskoye-3 and Ural'skoye-109, which enabled them to significantly overfulfill last year's plan for delivery of this valuable groats crop to the state.

Unfortunately, in a number of oblasts and rayons innovations resulting from breeding are still being introduced very slowly. For example, the highly productive millet variety, Uilskoye Beloye, was developed in Aktyubinsk Oblast, but a very small area is sown in it.

First and foremost, variety seed breeding associations with an extended network of specialized seed farming enterprises and stations must supply sovkhoses and kolkhozes with high-quality seeds. However, this system is still doing a poor job of multiplying regionalized varieties. Sometimes individual seed enterprises cannot even supply themselves with good-quality seed. Cases like this occurred in Taldy-Kurgan Oblast, for example.

The role of an enterprise's agronomic service is great in promoting new varieties. In places where specialists work creatively and with initiative breeding innovations are introduced rapidly. Constant research in this area is being conducted by V. Lyuft, senior agronomist of Zlatopol'skiy Sovkhoz, Shchuchinskiy Rayon, Kokchetav Oblast. This enterprise not only supplies itself with quality seed, it supplied it to other enterprises as well.

Simultaneously with stockpiling, kolkhozes and sovkhoses are obligated to bring seed up to condition without delay in order that each kilogram satisfy the sowing standards for the first class category. This is exactly what is being done today in leading enterprises, as for example Armavirskiy, Baumanskiy, Krasnoznamenskiy and Krasnoozernyy sovkhoses of Tselinograd Oblast, Zelenoborskiy, Urumkayskiy and imeni K. Marx sovkhoses of Kokchetav Oblast and Amangel'dinskiy and Karagandinskiy of North Kazakhstan Oblast. Here brigades consisting of experienced machine operators working on a 24-hour per day basis have been organized to prepare seed. As soon as equipment on threshing floors is freed from cleaning commercial grain it is reassigned to seed processing in order to complete it during warm fall days.

Rayon seed inspectorates and plant-protection stations are called upon to render extensive aid to sovkhoses and kolkhozes in terms of creating a dependable seed fund. They must not only implement careful daily controls over the course of seed preparations but also participate in inter-enterprise and inter-rayon exchange operations, supply enterprises with new and valuable varieties and actively introduce progressive experience.

"Preparing the future harvest today!" is the motto for socialist competition in the village. Providing dependable supplies of high-quality seed of promising varieties for every sovkhos and kolkhoz in the republic is a priority task of party and soviet organs, RAPO councils and all village specialists and workers. To fulfill this task means to lay a firm foundation for a large harvest during the final year of the five-year plan and during subsequent years and to make a worthy contribution to the realization of the Food Program.

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## MAJOR CROP PROGRESS AND WEATHER REPORTING

### BRIEFS

SERIOUS ATTITUDE TOWARD SEED--Omsk, 22 [Nov]--This fall was a difficult one for the kolkhozes and sovkhozes of Omsk Oblast in terms not only of harvesting but of stockpiling seed for the future harvest as well. Nevertheless, many rayons dealt successfully with this affair. Kolkhozes and sovkhozes stockpiled a seed fund of high quality. In Pavlogradskiy Rayon, for example, all seed is already conditioned and over 90 percent of it belongs to the first and second classes of the sowing standard. The enterprises of Odesskiy, Mar'yanovskiy and Isil'kul'skiy rayons in the oblast demonstrated well their concern for the future harvest. [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 23 Nov 84 p 1] 8228

SEED READIED FOR HARVEST--Kemerovo, 14 [Jan]--In the oblast's leading enterprises it has already become a tradition to prepare seed for next year's harvest ahead of time. Presently, many kolkhozes and sovkhozes of Leninsk-Kuznetskiy, Kemerovskiy, Promyshlennovskiy, Prokop'yevskiy and other rayons have already brought grain seed up to first and second class standards. In Lugovoy, Shcheglovskiy, Kemerovskiy and Krasninskiy sovkhozes, and Kholkhozes Zarya, and imeni 20 Parts'yezd of Leninsk-Kuznetskiy Rayon, imeni Michurin of Promyshlennovskiy Rayon and many others, analyses made by the seed-control laboratory yielded good results for all batches of cleaned seed. [By P. Chernov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 15 Jan 85 p 1] 8228

GRAIN HARVEST COMPLETE--(KazTAG)--The republic's farmers, having begun shock labor in honor of the 67th anniversary of Great October, are completing the delivery of grain seed to granaries. Because of weather conditions grains did not mature uniformly. This made the cleaning and sorting of seed more difficult. An accelerated pace and improved quality of preparations of the golden harvest fund are being achieved by specialized plants and mechanized interenterprise complexes and points. All threshing floors on central farms of enterprises are mechanized and equipped with active ventilation equipment and heat generators. Under conditions of a dry summer new grain varieties turned out to be most productive. Next year the acreage in these will increase by 1 million hectares. [Text] [Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 4 Nov 84 p 1] 8228

SEED CONDITIONING--Semipalatinsk, 20 [Oct]--In many oblast enterprises special links have been created to bring seed up to a high sowing condition. This work has been well-organized in Chigilek, Urdzharskiy and imeni Lenin sovkhoses and in other enterprises of Novoshul'binskiy, Urdzharskiy and Kokpektinskiy rayons. Here grain seed has been conditioned to meet first and second class requirements. This year in the oblast three times more grain of the elite and first reproduction groups has been stored for the future harvest. The quantity of seed of valuable varieties such as Kazakhstanskaya-4 and Tselinnaya-1 spring wheats and Prikumskaya-36 winter wheat has increased many times over. [By V. Yelufimov] [Text] [Moscow SEL'SKAYA ZHIZN' in Russian 21 Oct 84 p 1] 8228

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## LIVESTOCK

### NEED TO IMPROVE CENTRALIZED TRANSPORT OF CATTLE, POULTRY

Moscow EKONOMICHESKAYA GAZETA in Russian No 6, Feb 85 p 16

[Article by Yu. Krokha, deputy minister of the meat and dairy industry of the USSR: "Mutual Interests of Partners"]

[Text] For enterprises and organizations of our ministry this will be a year of further strengthening and development of the production and technical base of the branch in order to eliminate the disproportions that exist in certain regions between commodity resources of livestock and the capacities for processing them. We are devoting special attention to the development of the construction of enterprises with small capacities in zones that are close to the sources of raw material.

Enterprises of the meat industry are changing over to receiving cattle and poultry directly on the farms, with centralized shipment for processing using specialized automotive transportation.

#### Toward Direct Ties

The production of this progressive form of procurements contributes to reducing labor and material expenditures during the process of moving the products of the farms to the processing enterprises and makes it possible to organize the shipment of livestock more efficiently and rhythmically, as a result of which the provision of meat combines with raw material and the utilization of production capacities improve. Moreover the farms do not have to take away funds for delivering the animals they have raised to the receiving points of the procurement workers, and it becomes possible to concentrate existing automotive transportation and labor resources directly in the sphere of production.

Last year the meat combines received from the farms and shipped centrally more than 4.7 million tons of cattle and poultry, 37 percent of the overall volume of livestock procured for industrial processing.

Centralized shipment of livestock has been introduced on a large scale into the practice of the interrelations between the farms and meat combines of Belorussia. On an average for the republic more than 70 percent of the livestock is received directly on the kolkhozes and sovkhozes here. Farms and meat combines of Mogilev, Brest and Grodno oblasts have completely changed

over to sale and receipt of livestock in the places of production. The new form of interrelations between the farms and the meat combines is being realized successively in Lithuania, Latvia and many oblasts of the Ukraine.

The experience in centralized shipping of poultry in Stavropol Kray, which is being introduced for the first time in the country, is of interest. By a decision of local agencies, cattle trucks and large-cargo vehicles that were allotted to agriculture have been transferred to automotive transportation enterprises of the krayssel'khoztekhnika. In the kray they have established clear-cut mutually agreed-upon actions of the Broiler Association (where the raising of poultry has been organized for flow-line industrial technology) and the automotive transportation enterprises of krayssel'khoztekhnika which shipped the poultry strictly according to schedule, and the meat combines. Here they use specially manufactured containers, which makes it possible to increase the mass of poultry delivered in one trip more than 1.5-fold, to mechanize loading and unloading work, to reduce labor expenditures, and to reduce the idle time of motor vehicles to approximately one-third.

In many regions of the country the work for introducing the new form of procurements was accelerated after the formation of agroindustrial associations. The councils of agroindustrial associations create interdepartmental commissions for verification and control over the preparation of conditions on the farms and at the meat combines for the new policy of procurements, and they concentrate in single institutions the necessary specialized automotive transportation, and they also solve other problems related to this.

#### What Caused the Difficulties?

In 1985 the meat combines will ship 33 percent more cattle and poultry than they did last year. Attaching special significance to this work, it was decided to take into account the results of the introduction of this progressive method of procurements when summing up the results of socialist competition of the collectives of production associations and enterprises.

In order to increase the effectiveness of the utilization of automotive transportation and organize centralized shipment of cattle and milk more efficiently, work is being done in the branch for concentration of transportation in specialized automotive bases. As a rule, they are located in the oblast centers, and with the development of centralized shipment a ramified network is being created for branch stations for specialized motor vehicles of the head automotive base. The branch stations are basically located in the rayon centers, large villages and at the enterprises. This kind of distribution of specialized transportation makes it possible to reduce extra long-distance deadhead trips of transportation and to bring it closer to the local processing enterprises.

In Belorussia, Kazakhstan, Moldavia and Uzbekistan within the system of the branch they have created production associations for automotive transportation. Transportation in these republics operates in a more organized and economical way, and the indicators of its utilization are 15-25

percent higher than for the utilization of motor vehicles that are located directly in the enterprises.

Serious difficulties in the development of centralized shipment of livestock have been caused by the extremely limited allotment of specialized transportation and the necessary capital investments for these purposes. The USSR Gosplan and the USSR Gossnab have been instructed to allot to the ministries and departments that are carrying out procurements of agricultural products specialized motor vehicles and also capital investments to pay for them and the construction of garages and a repair base as well as for acquiring containers and other loading and unloading equipment.

But each year the USSR Ministry of the Meat and Dairy Industry fails to receive a single cattle truck or a single ruble of capital investments for these purposes. This impedes the acceleration of the introduction of centralized shipment of cattle and creates serious difficulties in creating normal conditions for the operation, repair and technical servicing of specialized automotive transportation. The provision of garages and a repair base for automotive enterprises amounts to only 30 percent.

Practice confirms the expediency of more extensive enlistment of specialized automotive transportation of Goskomsel'khoztekhnika and the general-purpose automotive enterprises for centralized shipment of cattle and poultry as is done in Latvia, the Ukraine, Kirghizia, and Voronezh, Penza, Tula, Ternopol and a number of other oblasts of the country.

The main reasons for the slow introduction of centralized shipping are the inadequately developed roads network, the slow construction of sidings to farms and loading and unloading areas, and the lack of scales for weighing the livestock on many farms. The managers of kolkhozes and sovkhozes and the councils of agroindustrial associations should accelerate the creation of these conditions.

There is now a need for a radical improvement in the specialized motor vehicles produced by the automotive industry for shipping cattle, and their modifications should be expanded. The semitrailer cattle trucks which are now being produced do not have the necessary strength and durability and they break down considerably before the normative time.

Now, by an order of the ministry, the Ministry of the Automotive Industry has developed and tested experimental models of a new family of specialized automotive transportation which are capable of shipping 1.5-2 times as many cattle as the current ones are. They have been recommended for series production.

There is a critical need to accelerate the output of specialized trucks and containers for shipping poultry.

For effective work of the agroindustrial complex for producing animal husbandry products it is very important to have efficient interactions between the farms and the meat combines in providing for organized sale and receipt of cattle and poultry. A decisive role here is played by strict observance of

the agreed-upon daily and hourly schedules. Unfortunately, there are frequent cases in which the farms do not adhere to these schedules. Apparently there is a need to increase in the normative documents the responsibility of the farms for observing contractual commitments.

The labor collectives of the associations and enterprises are concentrating their efforts on early fulfillment of the 1985 plan in terms of all the basic indicators, and they are searching for and putting to work all existing reserves for further improving their operation and steadily increasing the country's food supply.

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AGRO-ECONOMICS AND ORGANIZATION

PRODUCTION COST REDUCTION ON AGRICULTURAL OUTPUT SOUGHT

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 2, Feb 85 pp 99-106

[Article by V. Lazutin, subdepartment chief, USSR Gosplan: "Reserves for Reducing Production Costs for Agricultural Output"]

[Text] The May 1982 Plenum of the CPSU Central Committee underscored the importance of developing production relations in the national economy's agroindustrial complex. A management system is being created, which is contributing to the realization of the nation's Food Program. A great deal of attention is being devoted to the improvement of economic incentives for agricultural production and to the strengthening of cost accounting in the branch.

The 1 January 1983 increase in procurement prices for agricultural products, the setting of markups on those prices for farms operating at a loss or at a low profit level, and the introduction of special-purpose, budget financing of planned measures on each kolkhoz and sovkhoz have made it possible to increase output, raise the profitability level and reduce outlays.

The results from 1983 indicate that the economies of agricultural enterprises have been strengthened considerably in all the Union republics. Their receipts for sales of output to the state increased by more than one-third over 1982. The farms obtained around one-fourth of the additional income by expanding production and sales of output. Profits for the kolkhozes and sovkhozes increased from 1.3 to 23.6 billion rubles, and the profitability level for public production grew from 1.3 to 22 percent. In animal husbandry, formerly unprofitable milk, cattle, hog and sheep production operations became profitable. The profitability level for potatoes and other vegetables and sugar beets was raised substantially.

There have been some fundamental changes in the structure of the sources of financial resources for the kolkhozes and sovkhozes. Budgetary funds and bank credit accounted for more than 70 percent of the total for sources of financing of planned measures for agricultural enterprises in 1982. The figure was only 36 percent in 1983, and the specific proportion of profits increased from 28 to 64 percent. The farms will therefore now have to earn the bulk of the funds needed for expanded reproduction by increasing production and sales of output.

The steps which have been taken have especially affected the economic situation of farms which previously operated at a loss or at a low profit level. As a



rule, these are kolkhozes and sovkhozes which are located in relatively poor natural conditions, are less well equipped with fixed capital and experience a shortage of permanent, skilled workers. They accounted for around 70 percent of the total amount of additional income earned from the increase in the selling prices of products in 1983. Differences in the profitability levels for various groups of agricultural enterprises and among individual products have been erased to a substantial degree. The portion of kolkhozes operating at a loss or with a profitability level of less than 10 percent for public production has been reduced from 69 to 24 percent; sovkhozes from 72 to 42 percent, correspondingly. Around 60 percent of the kolkhozes and 44 percent of the sovkhozes had an aggregate profitability level of 10 to 40 percent in 1983.

The steps taken by the state to improve economic incentives have had a beneficial affect on the level of agricultural production. Gross agricultural output, incomparable prices, increased by 6.7 billion rubles, or 7 percent, in 1983, over the 1982 level. This is one of the highest annual rates of growth in recent years. Procurement plans for potatoes and other vegetables, livestock and poultry, milk and eggs were fulfilled. Public funds on the kolkhozes and sovkhozes were built up considerably.

The main thing now is to make the positive changes which have occurred in the economies of the kolkhozes and sovkhozes, stable and lasting, making full use of economic means of increasing production output, reducing production costs, cutting losses and increasing labor productivity. Mismanagement, wastefulness and an inability to effectively organize and carry out production can obviously not be compensated for by raising or setting markups on prices.

Procurement prices were increased and markups were established for the period 1983-1985, in order to eliminate the unprofitability of production on the farms by reducing production costs and enhancing production effectiveness. This task was not totally accomplished in 1983. Around 6,400 kolkhozes and sovkhozes ended the year with a loss. These farms accounted for 16 percent of the total number of kolkhozes and sovkhozes in the Russian Federation and Azerbaijan, 32 percent in the Kazakh SSR, 22 percent in the Tajik SSR, and 19 percent in the Uzbek SSR.

Despite a significant increase in selling prices over the 1982 prices, the kolkhozes and sovkhozes sold 26 percent of the potatoes to the state at a loss, 20 percent of other vegetables, 11 percent of the milk, 27 percent of the cattle and 29 percent of the hogs.

A continuing increase in production costs is the main cause of this situation. Outlays by the kolkhozes and sovkhozes to produce one quintal of grain, cotton, sugar beets, fruits, milk and wool were greater in 1983 than in 1982 for the USSR as a whole. The basic cost of weight gain for cattle and hogs increased on the sovkhozes.

Data on changes occurring in production costs for the main agricultural products on the nation's kolkhozes and sovkhozes are given in Table 1.

Table 1. Average Annual Production Costs for the Main Agricultural Products on Kolkhozes and Sovkhozes (in rubles/quintal)

(1) Вид продукции	(2) Пятилетка				
	девя- тая (3)	десятая (4)	три года одиннад- цатой (5)	десятая, % к де- вятой (6)	три года одиннад- цатой, % к де- сятой (7)
Зерно (без кукурузы) (8) . . . . .	6,15	7,11	8,89	116	125
Сахарная свекла (9) . . . . .	2,59	2,98	3,48	115	117
Хлопок-сырец (10) . . . . .	40,99	46,45	53,61	113	115
Картофель (11) . . . . .	8,05	10,34	13,42	128	130
Овощи открытого грунта (12) . . . . .	9,58	10,33	11,60	108	112
Молоко (13) . . . . .	20,87	26,49	31,95	127	121
Привес крупного рогатого скота (14) . . . . .	149,79	209,93	242,90	140	116
Привес свиней (15) . . . . .	131,11	162,72	201,24	124	124
Привес птицы (16) . . . . .	166,13	173,60	174,57	105	101
Яйца (за 1 тыс. шт.) (17) . . . . .	63,07	63,90	64,77	101	101

Key:

- |  |                            |
|--|----------------------------|
| 1. Product                             | 10. Raw Cotton             |
| 2. Five-Year Plan                      | 11. Potatoes               |
| 3. 9th                                 | 12. Open-ground Vegetables |
| 4. 10th                                | 13. Milk                   |
| 5. 3 Years of 11th                     | 14. Beef Weight Gain       |
| 6. 10th, Percentage of 9th             | 15. Hog Weight Gain        |
| 7. 3 Years of 11th, Percentage of 10th | 16. Poultry Weight Gain    |
| 8. Grain (not including corn)          | 17. Eggs (per thousand)    |
| 9. Sugar Beets                         |                            |

Production outlays per quintal of grain increased by 45 percent under the current Five-Year Plan, compared with the 9th, sugar beets--34, raw cotton--31, potatoes--67, and other vegetables--12 percent, milk and weight gains for cattle and hogs--1.5- to 1.6-fold. All cost items for the production of these products increased at growing rates. Poultry production output is the exception. This is due to the fact that industrial technologies have been adopted in this branch.

There are a number of reasons why production costs for agricultural products have grown more rapidly than the results.

In the first place, steps have been taken in recent years to bring the level of wages for farm labor up to that of other branches. This has given the kolkhoz and sovkhoz workers a greater incentive to increase public production. Despite the increased capital-labor and power-worker ratios for workers in the branch and large deliveries of machinery and equipment for agriculture, outstripping rates of growth have not been achieved for labor productivity.

Under the 10th Five-Year Plan, agriculture received 22.6 billion rubles worth of machinery and equipment (not counting tractors, motor vehicles and excavating equipment), and the figure for the period 1981-1985 has been set at 31.9 billion rubles. A total of around 2,500 rubles worth of these mechanization means will have been delivered for each worker employed in public agriculture under the two

five-year plans. The increased mechanization of the work has made it possible to reduce labor consumption in the production of many products, to improve working conditions in the fields and on the farms, and to regulate working conditions for branch workers.

Overall labor outlays for the production of agricultural products on the kolхозes and sovkhozes still increased from 42.9 billion man-hours in 1975 to 43.5 billion in 1983, however. The number of workers in animal husbandry is not being reduced, and the livestock tending norms are being raised slowly. Only half of the total herd of cattle, two-thirds of the hogs and 21 percent of the sheep are presently kept on farms with total mechanization of the production processes. A lag in the mechanization of individual jobs involved in the cultivation of cotton, sugar beets, potatoes and other vegetables, and certain other crops, and the loading and unloading operations, deficiencies in the agricultural practices and a shortage of herbicides have made it necessary to continue performing a great deal of heavy manual labor in the branch. It accounts for around two-thirds of all the labor outlays. Despite a growth of labor productivity in agriculture, this has resulted in increased production costs due to an increase in specific wage payments for practically all of the main products.

In the second place, the increased cost of construction, balanced rations, petroleum products, fertilizers, spare parts, construction materials, equipment and other manufactured means of production used in agriculture has affected production costs.

Special prices for balanced rations sold to the kolхозes and sovkhozes were abolished in 1975. The system of providing subsidies from the budget to cover the difference between wholesale and release prices was cancelled in 1983. Prices of spare parts and repair materials have increased. In addition to an increase in the cost of materials provided to agriculture, for which agriculture is compensated for the resulting losses with corresponding increases in procurement prices, a unit of beneficial effect from the production means delivered is also becoming more costly as a result of changes in the structure of the deliveries and improvement of the resources.

The fixed capital in animal husbandry has been replaced to a significant degree since 1965, for example. Around 90 billion rubles has been invested in the construction of livestock buildings and complexes, and this has made it possible to house 70 percent of the cattle and 90 percent of the hogs in the new standard premises, to improve the conditions in which the livestock are kept and to make the labor of the livestock workers easier. The cost of building one new space for livestock has constantly increased, however, and it presently exceeds the 1970 level by 2- to 3-fold. The amount of depreciation allowances and maintenance costs for the fixed capital per head of livestock and per unit of output from animal husbandry has increased sharply as a result.

In the third place, in the situation of increased deliveries of equipment and fertilizers for agriculture and increased capital investment volumes, the negative effects of inadequate balance of the individual parts of the materials and equipment base have intensified.

The main disparities among the material factors involved in increasing agricultural output, which are reducing its effectiveness, include a shortage of phosphorous fertilizers, herbicides and lime-containing materials, the incomplete

nature of machinery and equipment deliveries, a lack of proper coordination between the build-up of the livestock herd and the poultry flock and the increase in feed production, a shortage of feed protein, and lagging development of the base for storing feeds and other products and for road construction.

The disproportions and bottlenecks are reducing the return from the capability created in the branch, resulting in losses and inefficient use of newly allocated resources and consequently, in increased production costs. This can be seen from Table 2.

Table 2. Average Annual Increase in Gross Output and Basic Resources in Public Agriculture (1981-1983 as a Percentage of 1976-1980)

Показатель (1)	(2) РСФСР	Украин- ская ССР (3)	Казахская ССР (4)
Капитальные вложения (5)	10	—	4
Основные производственные фонды (6)	34	29	28
Поставки минеральных удобрений (7)	17	13	29
Энергетические мощности (8)	22	22	13
Валовая продукция сельского хозяйства в сопоставимых ценах (9)	2,3	-1,6	-3,7
Производительность труда (10)	6,0	6,2	-7,5

Key:

- |                        |   |
|------------------------|---|
| 1. Item                | 6. Fixed Production Capital                       |
| 2. RSFSR               | 7. Mineral Fertilizer Deliveries                  |
| 3. UkSSR               | 8. Energy Capacities                              |
| 4. KaSSR               | 9. Gross Agricultural Output in Comparable Prices |
| 5. Capital Investments | 10. Labor Productivity                            |

The material circumstances for intensive production were considerably better in those republics during the first 3 years of the current five-year plan than during the 10th. The end result did not adequately conform to the measures carried out to strengthen the technical base, however, measures which were to a significant degree limited to the accumulation of capital, and the attendant additional expenditures produced an increase in production costs. In the Russian Federation, where deliveries of mineral fertilizers increased by 17 percent and deliveries of organic fertilizers by 29, and where the area of reclaimed land was increased, gross output from crop production was less than under the 10th Five-Year Plan. It was the same situation on farms in the Ukraine and Kazakhstan.

In the fourth place, the inadequate effectiveness of additional investments in the development of agriculture is due to a deterioration of the manpower situation on farms in the Nonchernozem Zone, the Central Chernozem, West and East Siberian regions of the RSFSR, and individual oblasts in the Ukraine and Belorussia. As a result of the shortage of workers, many farms are not in a position to use their growing production capabilities for a large return. The rural area's lag behind the city in housing and road construction, and living conditions, which does not help to retain personnel in the rural area, has also had an affect and is still being felt today on many farms.



Finally, I could not fail to mention omissions in the work of the kolkhozes and sovkhozes, the Sel'khoztekhnika and Sel'khozkhimiya [Association for the Application of Chemicals in Agriculture?], the reclamation and procurement organizations. Objective factors and weather conditions continue to be used to cover up for negligent use of the land, feeds, fertilizers, equipment and buildings, and the losses caused by this are growing along with the increase in deliveries of materials for agriculture and of production volumes.

The following figures say something about the price which has to be paid as a result of the negative effects of the last three groups of factors. If we calculate the cost of labor outlays and materials in the public sector over the past 13 years in comparable prices, eliminating the influence of factors causing prices to rise, it increased by 4 percent in 1973 prices per 100 rubles of gross output under the 10th Five-Year Plan, compared with the 9th, and has increased by 8 percent during the first 3 years of the current five-year plan, compared with the 10th. Calculated for average annual gross output for the period 1981-1983, the total amount of additional investments of material resources (not including depreciation of fixed capital) was around 11 billion rubles. Unlike the 9th Five-Year Plan, they did not result in a growth of production output under the 10th, but increased the cost.

The system of measures designed to create the conditions for outstripping growth of labor productivity over growth of wages in the branch; the elimination of bottlenecks and disproportions, both inter- and intra-branch, which are keeping crop yields and livestock productivity from increasing; the establishment of stable labor collectives on every kolkhoz and sovkhoz; and the study and extensive adoption of the experience of outstanding farms in the efficient organization of production could provide a real basis for reducing agricultural production costs.

Manufactured goods account for around two-thirds of the material outlays in agriculture. The thoroughness with which agriculture is provided with means of mechanization and application of chemicals, the quality of the equipment, fertilizers and feeds, and their cost greatly influence the yields of grain, feed and other crops and livestock productivity, and to a significant degree determine the labor- and materials-intensity of agricultural production.

Because of this, we must solve the problem of increasing agricultural deliveries of mineral fertilizers, especially phosphorous fertilizers; herbicides; complete balanced rations; materials for liming acidic soils; highly efficient machinery for applying fertilizers, for performing loading and unloading operations and for producing feeds; and tractor-mounted equipment for the K-700 and T-150 tractors. The tasks of the chemists, machine builders and workers in other industrial branches in this area are defined up to the year 1990 in the Food Program. As we fulfill the state plans, we need to identify additional possibilities for increasing deliveries of material resources to agriculture, improve the quality of the equipment, spare parts and balanced rations, and implement steps to reduce the cost of agricultural construction.

Agriculture itself has extensive possibilities for making the use of labor and material resources more effective. In 1983, for example, the cost of producing one quintal of grain on kolkhozes ranged from 5 to 30 rubles, potatoes--5 to 40, raw cotton--35 to 55, and sugar beets--from 2 to 6 rubles.

The average annual ratio of outlays to output in beet production is described by the following figures (Table 3).

Table 3.

Показатель (1)	Пятилетка (2)		
	(3) девятая	(4) десятая	три года одиннадцатой (5)
Всего затрат на 1 га убранной площади, руб. (6)	617	778	816
Урожай корней с 1 га посева, ц (7)	223	249	209
Себестоимость 1 ц корней, руб. (8)	2,59	2,88	3,36

Key:

- |                          |   |
|--------------------------|---|
| 1. Item                  | 6. Total Outlays Per Hectare of Land Harvested, Rubles    |
| 2. Five-Year Plan        |   |
| 3. 9th                   | 7. Root Crop Yield Per Planted Hectare, Quintals          |
| 4. 10th                  | 8. Production Costs for One Quintal of Root Crops, Rubles |
| 5. First 3 Years of 11th |   |

Outlays per hectare of sugar beets have been 199 rubles greater, or a third more, under the current Five-Year Plan than under the 10th. The application of fertilizers and chemical plant protection means and crop areas worked with machinery have increased as a result of steps taken to intensify beet farming. Equipment operation and repair costs and the cost of fertilizers, herbicides, seed and fuel increased correspondingly. The labor-intensiveness of sugar beet production dropped.

Bottlenecks in the development of the subbranch as a whole have not been eliminated, however. A shortage of manpower prevents operations involved in caring for the crops from being performed at the right time. A shortage of herbicides and means of mechanization is holding up the adoption of industrial technologies. Sugar beet yields have therefore fallen, and the additional investments of material resources have increased the production costs.

An analysis of data for kolkhozes raising sugar beets shows that the production cost level per quintal of beets depends to a crucial degree upon the yield (Table 4).

The cost of cultivating one hectare of sugar beets on kolkhozes in the first group were 5 percent lower than on kolkhozes in the second group. The high level of mechanization of the operations resulted in lower labor-intensity in beet production in the first group of kolkhozes, although outlays for wages per hectare were greater than on kolkhozes with a production cost of more than 3 rubles per quintal of beets. Consequently, outlays for seed, fertilizers and mechanized operations and for combating weeds and pests were greater on farms in the second group. Yields were greater by 111 quintals per planted hectare on kolkhozes in the first group, however. This accounts for the difference in production costs per quintal of beets. The higher caliber of the agricultural practices, the schedules adhered to in caring for the crops and the scale of adoption of industrial technologies had an effect.

Table 4. The Dependency Between Sugar Beet Production Costs and Yields on Kolkhozes of the USSR in 1983.

Показатель	(1)	Группы хозяйств с себестоимостью 1 ц свеклы	
		до 3 руб (3)	свыше 3 руб (4)
Удельный вес, %: (5)			
в посевной площади (6) . . .	31	69	
в валовом сборе (7) . . .	41	59	
Урожай корней, ц/га (8) . . .	316	205	
Затраты, руб/га (9) . . .	858	902	
В том числе оплата труда (10)	326	306	
Затраты труда, чел.-ч/га (11)	213	253	
Себестоимость корней, руб/га (12)	2,71	4,40	

Key:

1. Item	7. in gross yield
2. Groups of Farms With Production Costs Per Quintal of Beets	8. Beet Yield, Quintals per Hectare
3. of less than 3 rubles	9. Outlays, Rubles per Hectare
4. of more than 3 rubles	10. Including Wages
5. Specific Portion, Percentage	11. Labor Outlays, Man-hours per hectare
6. in total planted area	12. Beet Production Costs, Rubles per Hectare

A similar situation developed in the dairy operations of the kolkhozes and sovkhoses. On the kolkhozes, for example, the cost of caring for one cow increased from 508 rubles under the 9th Five-Year Plan to an average of 751 rubles during the period 1981-1983, a 1.5-fold increase. All kinds of costs rose, but outlays for feed, depreciation and maintenance of fixed capital in dairy farming grew especially rapidly. Feed accounted for around one-half of the total cost increase, wages--13 percent, and all other types of expenses--39 percent.

Due to the imperfect feed production structure, the consumption of feed per quintal of milk steadily rose, reaching 154 feed units in 1983. The average cost of one quintal of feed in feed units grew from 5.29 rubles under the 9th Five-Year Plan to 8.13 under the current plan. The increased portion of concentrates, particularly purchased concentrates, achieved by reducing the specific portion of succulent and green fodder, primarily from pasturage, contributed to this.

Using the example of the dairy industry, we can clearly see the discrepancy typical in recent years, with the exception of 1983, between the increase in the herd of livestock and the poultry flock and possibilities for increasing production volumes and feed procurement. Average annual feed consumption has been 15 percent greater on the kolkhozes and sovkhoses under the current Five-Year Plan than under the 9th. The total herd of all types of livestock, converted to standard cattle, has grown by approximately the same amount. Practically the entire increase in the output of animal husbandry products has been achieved by building up the livestock herd and the poultry flock.

From the standpoint of reducing the production costs of animal husbandry products and conserving capital investments and labor outlays, it would seem to be more effective to increase the production of meat, milk and other products by raising the productivity of the animals. Especially, since the scientists and practical workers estimate that the present genetic potential of the animals makes it possible, with complete rations, to obtain at least 3,000 kilograms of milk from



each cow annually, to increase the meat yield from cattle and hogs by 1.4- to 1.5-fold, and to reduce the time required to raise and fatten them. With respect to the total herd of livestock, our nation has one of the largest in the world.

As we come to the end of the current Five-Year Plan and approach the 12th, it is important to concentrate our efforts and means on the main directions in the work of reducing production costs and increasing the profitability of agricultural products.

The nation's outstanding kolkhozes and sovkhoses in various natural and economic conditions are achieving a high level of effectiveness in dairy farming by providing them with complete rations, achieving a high level of productivity and mechanizing the labor-intensive processes (Table 5).

Table 5. Expenses in Dairy Farming for 1983.\*

Показатель (1)	Колхоз им. Ленина Тульской обл. (2)		Совхоз «Наровский» Красноярского края (3)		Колхоз «Тайка» Литовской ССР (4)		Колхоз им. Ленина Запорожской обл. (5)	
	(7)		(7)		(6)		(7)	
	(6) — на 1 гол. ву скота	на 1 ц молока	(6) — на 1 гол. ву скота	на 1 ц молока	(6) — на 1 гол. ву скота	на 1 ц молока	(6) — на 1 гол. ву скота	на 1 ц молока
Удой молока, кг (8)	5362	—	3270	—	3567	—	2922	—
Затраты — всего, руб. (9)	977	17,06	550	15,25	814	21,77	622	19,41
В том числе: (10)								
оплата труда (11)	121	2,12	188	5,22	211	5,66	233	7,28
корма (12)	610	10,65	213	5,90	295	7,90	211	6,60
прочие затраты (13)	246	4,29	149	4,13	308	8,21	178	5,53
Прямые затраты труда, чел.-ч (14)	78	1,41	130	3,8	171	4,57	155	4,8
Оплата труда в расчете на 1 чел.-ч, руб. (15)	1,55	—	1,45	—	1,24	—	1,51	—
Расход кормов, ц корм. ед. (16)	60,5	1,09	49,2	1,42	34,9	0,93	36,9	1,19
Стоимость 1 ц корм. ед., руб. (17)	10,1	—	4,33	—	8,46	—	5,73	—

\*The Kolkhoz imeni Lenin in Tula Oblast has 993 head of cattle, the Nazarovskiy Sovkhoz in Krasnoyarsk Kray has 2,528, the Tayka Kolkhoz in the Lithuanian SSR has 627, and the Kolkhoz imeni Lenin in Zaporozhye Oblast has 1,270; the workload per milker is 47, 30 and 28 head respectively.

Key:

- |   |  |
|---|--|
| 1. Item                                   | 10. Including:                               |
| 2. Kolkhoz imeni Lenin, Tula Oblast       | 11. Wages                                    |
| 3. Nazarovskiy Sovkhoz, Krasnoyarsk Kray  | 12. Feed                                     |
| 4. Tayka Kolkhoz, Lithuanian SSR          | 13. Other expenditures                       |
| 5. Kolkhoz imeni Lenin, Zaporozhye Oblast | 14. Direct labor outlays, man-hours          |
| 6. Per cow                                | 15. Wages per man-hour, rubles               |
| 7. Per quintal of milk                    | 16. Feed consumption, quintals of feed units |
| 8. Milk yield, kilograms                  | 17. Cost of one quintal feed units, rubles   |
| 9. Total expenditures, rubles             |  |

It is apparent from these data that the main factors responsible for the low production costs per quintal of milk on the Kolkhoz imeni Lenin in Tula Oblast are a high level of livestock productivity, low feed consumption per quintal of milk and minimal labor intensiveness in the milk production. On the Nazarovskiy Sovkhoz in Krasnoyarsk Kray and the Kolkhoz imeni Lenin in Zaporozhye Oblast, the main attention is focused on reducing feed production costs and increasing labor productivity. On the Tayka Kolkhoz in Lithuania, hay, haylage and green fodder account for around one-half of the total feed consumption in milk production. Various systems for maintaining the livestock and various means of mechanization of the production processes are used on those farms, but milk production costs are 1.5- to 2-fold below the branch average.

The farms with low production costs in animal husbandry typically devote a great deal of attention to increasing hay production, especially the production of perennial legumes and high-quality haylage, and to the establishment and effective use of cultivated pasture. Irrigated or drained land is used, and mineral fertilizers are applied for raising the grass.

Active ventilation is extensively used for preparing the hay, and the entire harvest is stored in covered facilities. The use of the vegetable mass for preparing hay or haylage varies according to weather conditions. There is a good reason for giving this kind of attention to grass fodder. The production costs per feed unit of coarse fodder averages 40 percent less than the cost of concentrates, and green fodder averages 56 percent less.

Every Union republic and every rayon has farms whose experience is graphic confirmation of the fact that the most important thing in the intensification of production is to increase the output per unit of existing and incoming material and financial resources.

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## AGRICULTURAL MACHINERY AND EQUIPMENT

### MINISTRY URGES MODERN EQUIPMENT FOR AGRICULTURE

Moscow EKONOMICHESKAYA GAZETA in Russian No 31, Jul 84 p 2

[Article by A. A. Yezhevskiy, minister of Tractor and Agricultural Machine Building of the USSR: "A Modern Technical Arsenal for Farmers"]

[Text] In the implementation of the country's Food Program one of the decisive factors is equipping agriculture with the latest highly-effective equipment. A goal has been set before agricultural machine building--in the period to 1990 to basically complete the comprehensive mechanization of farming.

Comrade K. U. Chernenko emphasized at the All-Union Economic Conference on Problems of the Agro-Industrial Complex that our party v i e w s concern about the development of agriculture not only as an economic but also as a priority socio-political task.

In recent years Minsel'khoz mash [Ministry of Agricultural Machinery] has implemented a series of measures directed at raising the technical level of production and at increasing the output of machines for soil-conservation systems of farming and industrial technology. However, on the whole the level of production organization and assimilation of new equipment still does not meet the large-scale needs of contemporary agrarian party policy.

This is why the CPSU Central Committee and the USSR Council of Ministers in April of 1983 passed the resolution entitled "On Measures to Further Increase the Technical Level and Quality of Machines and Equipment for Agriculture, to Improve Their Use, and to Increase Their Production and Delivery in 1983-1990." The document foresees the cardinal measures for technically reequipping the village; it determines directions for the overall quality development of tractor and agricultural machine building.

In coming years it is planned to develop designs and to assimilate the production of no fewer than 600 types of new and modernized machines of a high technical level.

It is planned to increase the productivity of machine-tractor units by a factor of almost 2. We must increase tractor and motor resources to 8,000-10,000 motor hours, increase accrued operating time per breakdown by a factor of 1.5-3 since this is one of the main indicators of dependability, significantly

decrease the per unit materials consumption of products and create comfortable working conditions for machine operators.

In 1983 70 items were developed, as compared to 36 in 1982. Antiquated T-100M tractors and T-74 tractors have been removed from production in the Chelyabinsk and Khar'kov plants respectively. In 1982-1983 about 40,000 square meters of area and over 230 test stands were introduced on experimental bases of the NII [Scientific Research Institute] and KB [Design offices]. During this period 70 percent more capacities for the production of agricultural machinery were put into operation than in 1980-1981.

This work is continuing on an even more extensive scale in 1984, the year which must become the decisive one in many respects with regard to the successful fulfillment of the goals for the 11th Five-Year Plan.

This year spring sowing required more agricultural equipment and working organs in a number of the country's regions. The existing situation forced our labor collectives to put supplementary reserves into action. The goals established for the production and delivery of equipment to agriculture for carrying out spring sowing were met by Minsel'khoz mash.

In the vanguard of socialist competition are the collectives of Rostsel'mash [Rostov Agricultural Machinery Production Association] and Tselinogradsel'mash [Tselinograd Agricultural Machinery Production Association], of Dnepropetrovskiy Combine Plant, of the Minsk, Volgograd and Khar'kov tractor plants and of the Vilnius Plant of Fuel Equipment. In general socialist obligations accepted by the collectives of associations and enterprises to increase labor productivity at least 1 percent above the plan and to additionally decrease the cost of production by no less than 1 percent are being fulfilled. In comparison with the same period last year labor productivity in Minsel'khoz mash increased by 6.5 percent between January and June as compared to the planned 3.2 percent. The cost of production has been decreased by 0.68 percent as compared to the plan. Within the branch the experience of the Dnepropetrovskiy Combine Plant on certifying work places in accordance with the rules of the scientific organization of labor is being widely disseminated. This has already enabled us to decrease work places by 20,000 and to free 34,000 operators for work in other shops.

At the same time we are not satisfied with the indicators of Kamyshevskiy Blacksmith-Foundry Plants, Chirchiksel'mash [Chirchik Agricultural Machinery Plant], Dzhambul Plant of Tractor Spare Parts and the Kotelnikovskiy Plant of Agricultural Machinery.

Here errors have been tolerated in production organization and in intra-plant planning; execution and labor discipline are low. Sufficient attention is not given to important questions such as strengthening the regimen of economizing on metal, fuel and energy. Now measures are being taken to decisively eliminate the aforementioned shortcomings.

The country allocates extensive resources for technical reequipping of the agro-industrial complex and it is our duty to achieve the effective use of the resources that are provided.

The manufacture of so-called "trains" of machines is considered to be of exceptional significance. In a number of leading plants within the branch intensive work is going on at the present time to increase the production of soil-cultivation and sowing equipment at a rapid rate and to develop new types of this equipment more quickly.

Thus, Tselinogradsel'mash [Tselinograd Agricultural Machinery Association] is beginning to produce new broad hitchless grain-fertilizer and stubble sowers, the use of which will enable us to increase labor productivity by 30 percent. As for serial tractor sowers, about 75,000 have already been supplied to agriculture.

Krasnyy Aksay Production Association has developed broad hitchless cultivators. Since the beginning of the year over 80,000 such units have been delivered to enterprises. Testing is being completed on an 18-row machine unit for cultivating sugar beets according to industrial technology, as well as a 12-row unit for corn and soybeans.

The technical arsenal of farmers will be filled with combination units that will enable them to fulfill several operations during one trip, with families of machines for the uniform application of fertilizer and lime into the soil and with small-volume and ultrasmall-volume sprayers. This year kolkhozes and sovkhoses have already received over 16,000 machines for the application of mineral fertilizers.

A family of standard plows (from three to nine bases) has been developed for the entire range of powerful tractors. At the present time we are preparing several new types of equipment, as for example, a family of plows equipped with hydraulic safety devices for soils that contain large numbers of rocks.

We have begun the assimilation of new chisel equipment which achieve non-mouldboard soil cultivation to a depth of up to 40 centimeters, which encourages better preservation and accumulation of moisture in the soil and prevents the development of water and wind erosion.

Under conditions of developing the all-union struggle for Harvest-84, a task of special state significance is that of supplying kolkhozes and sovkhoses with harvest equipment.

Branch collectives are making every effort to manufacture the necessary number of grain-harvesting combines and other agricultural machines as well as spare parts on schedule.

Manufacture of Agricultural Machines In Minsel'khosmash  
(billions of rubles)

1980	2.35
1981	2.47
1982	2.56
1983	2.69
1984 (planned)	2.80



Since the beginning of the year about 50,000 grain-harvesting combines have been delivered to the village. We are working on machine quality in sequence. We know that the Niva, Kolos and Sibiryak combines have been criticized repeatedly. At the present time the Niva and Kolos are being considerably modernized. Already during the current harvest operation the new Yenisey-1200 combines, a replacement for the Sibiryak, will move out into the fields. Combines from the Don family are undergoing extensive testing in various soil-climatic zones.

The production of powerful tractors is increasing. This year's plan calls for increasing their proportion in total manufacturing volume to over 34 percent. In the Khar'kov plant the manufacture of the new T-150 caterpillar machine is increasing; its technical-economic indicators are higher than those of the preceding model by a factor of 1.5-2 times. At the other leading branch enterprise--the Volgograd plant--preparations are being made for the manufacture of the new powerful and productive DT-175C tractor at the same time that the serial production of DT-75 machines is in progress. The Lipetsk plant has begun to prepare for the production of a standard cultivating tractor with a 150-horsepower motor.

The recent international exhibition, Sel'khoztekhnika-84, demonstrated the increased technical level of products manufactured by the branch. At the same time we must take additional measures to accelerate the introduction into production of all that is most progressive from the achievements of international agricultural machine building.

The pace of scientific-technical progress is increasing ceaselessly. We are obliged to keep up with the times.

In order to solve the problems set before the branch by the party and government, we must almost double the pace of design development and production of machines. Already this year we are to develop 146 machines, which is over double the number reached in 1983.

The development of new and modernization of existing tractors and agricultural machines is included in 57 comprehensive target branch programs and 49 scientific-technical programs of GKNT [State Committee on Science and Technology of the USSR Council of Ministers] and USSR Gosplan encompassing the entire cycle--from scientific development to assimilation of production capacities and serial production.

In order to achieve significant growth in the output of equipment and its rapid renewal extensive work is being carried out in the branch on the renovation, technical reequipping and building of new enterprises.

This year capital investments directed into building-installation work are 21 percent higher than in 1983. However, it should be said that despite the measures being taken jointly with ministries-contractors, building plans are not being fulfilled in a number of enterprises. Especially alarming is the situation on objects of Altay Tractor Plant, Volgograd Motor Plant and Kirovograd's Krasnaya Zvezda Plant.

In the years that have passed since the passage of the resolution of the CPSU Central Committee and USSR Council of Ministers on raising the technical level and quality of machines in the village, certain results have been achieved. In self-critically evaluating that which has been accomplished, the board of Minsel'khosmash also sees the shortcomings which must be eliminated in the very near future. First and foremost we are speaking about the technical policy carried out in the branch, the quality of manufactured products and the introduction into operation of capacities for the production of agricultural technology, especially machines for soil-conservation and industrial technology in farming and the grain industry.

The March 1984 meeting of the Politburo of the CPSU Central Committee pointed to the shortcomings that have been tolerated by the ministry in assimilating the production of a number of new machines and in the slow growth in output of groups of machines for powerful tractors. The board of Minsel'khosmash drew the most serious conclusions from this. Workers' meetings were held in all labor collectives of enterprises, KB's, shops, departments, shifts, sections and brigades to discuss the goals that have been established for the branch by the meeting of the Politburo of the CPSU Central Committee.

In every collective all strength, knowledge and experience are being directed at the unconditional achievement of the goals established by the Food Program.

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9 April 1985

## AGRICULTURAL MACHINERY AND EQUIPMENT

## CONFERENCE ON IMPROVING MACHINE QUALITY

Moscow EKONOMICHESKAYA GAZETA in Russian No 2, Jan 85 p 8

[Article by N. Sergun'kin: "Conference on Quality"]

[Text] The All-Union Conference on Problems Related to Increasing the Quality of Tractors, Motors and Agricultural Machinery took place in Moscow. Speaking at the conference were A. A. Yezhevskiy, USSR Minister of Tractor and Agricultural Machine Building and G. D. Kolmogorov, Chairman of USSR Gosstandart [State Committee of Standards of the USSR Council of Ministers]. Directors, senior engineers and directors of OTK [Departments of Technical Control] discussed measures that they are taking to increase the dependability of products and made proposals on improving this work.

Speeches and presentations noted that branch enterprises do not fully utilize the possibilities of standardization for increasing the technical level of manufactured products; in a number of enterprises the complex system of management of quality exists only in the formal sense. The work of technical-control services requires improvement.

Based on the results of the meeting and joint order by Minsel'khosmash [Ministry of Agricultural Machinery] and USSR Gosstandart a comprehensive branch plan was confirmed to deal with further improving the technical level and stability of production quality. The program foresees increasing the life of tractors and basic units to 8,000-10,000 motor hours in the near future, with a simultaneous decrease in the number of rejects by 10-60 percent, a decrease in the standard metal content by 1-6 percent and an increase in the proportion of products belonging to the highest quality category.

On the basis of the program sub-branch programs will be developed with specific goals concerning types of products as well as every model of tractor and agricultural machine.

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## AGRICULTURAL MACHINERY AND EQUIPMENT

### AGRICULTURAL EQUIPMENT NEEDS IN POLTAVA OBLAST DISCUSSED

Moscow IZVESTIYA in Russian 7 Dec 83 p 2

[Article by V. Vantsak, first deputy director of the oblast agro-industrial association and director of the oblast agricultural administration, Poltava Oblast: "In Defiance of Drought"]

[Text] Grain can be cultivated without plows. When will machine builders hear the voice of their main partners?

The Poltava Agricultural Test Station will be 100 years old the year after next. From the very beginning special hopes were placed in it. The selection of a place for the Poltava fields, as this support point to science was then called, was not accidental. Around it was chernozem soil, which periodically suffered from droughts. Understanding the nature of bad harvests and teaching the farmer to withstand adversity--these were the tasks set then before enthusiastic researchers.

A great deal has changed since then, of course. Only the weather has remained as before. As in the past, about once out of 3 years the fields of Poltava Oblast are subject to drought. Unstable winters require great creativity from the grain farmer even today in order to preserve the shoots of winter wheat. But one thing has become clear--bad weather can be withstood if the main link in farming--basic soil cultivation--is altered and if classic terrace plowing is discontinued.

In turning the soil with a plow the farmer performed the most labor-intensive operation in farming for dozens of years without realizing that this was disadvantageous to the harvest and the fertility of his fields. Plowing took place for every crop in the crop rotation under any conditions. Only the depth of plowing changed, the essence remained as before.

In our time Poltava chernozem has been given new life by the so-called plowless soil-conservation system of farming. For 9 years now oblast enterprises have utilized surface cultivation of soil. Extensive work has been done to equip enterprises with new technology; techniques have been developed which are frequently called the "Poltavian variant" of non-terracing field cultivation. In this case not only techniques but the psychology of farmers as well, which was even more difficult, underwent changes.

For people who quite recently still doubted and agonized over the question: "How is it possible to give up plowing when we have plowed since the time of our forefathers?" and who tried to stir up the soil "like down," non-mouldboard plowing has now become the foundation not only for protecting the soil from erosion but also for producing dependable harvests from year to year.

Bol'shevistskiy Trud Kolkhoz and Progress Kolkhoz of Karlovskiy Rayon, Yubileynyy Teaching Farm of Poltavskiy Rayon and Kolkhoz imeni Gor'kiy of Globinskiy Rayon were the pioneers in the new system of soil cultivation.

During the first seminars, when A. Fisun and N. Moroz, kolkhoz chairmen of Progress Kolkhoz and Bol'zhevitskiy Trud Kolkhoz respectively, showed the "lightly-subdued" fields with stubble standing on end, sighs and comments such as: "Nothing will grow here " were heard.

But now a different fact is important. These enterprises annually produce an average of no fewer than 40 quintals of grain per hectare, including over 50 quintals of winter wheat. Here on the average over a 5 year period plowless cultivation as compared to mouldboard plowing achieved an increase in yield of 5 quintals of wheat, 4.1 of spring barley, 4.1 of peas, 3.9 of oats, 4 of corn for seed and 42 of sugar beets.

As we can see, our leading workers have found considerable reserves. The new organs of agricultural administration must put these reserves into use everywhere and better than this was done until now. Oblast agro-industrial associations and RAPO's are orienting the collectives of enterprises toward the extensive assimilation and improvement of non-mouldboard plowing. Today two-thirds of the area--1.2 million hectares--are cultivated with sweeps and a selection of special equipment. All winter crops were sown only after non-mouldboard plowing.

Of course it will not be simple for farmers and their RAPO partners to meet high goals and to fulfill socialist obligations.

I would like to present here some, in my opinion, curious figures. Here is what yields look like for winter wheat during 3 especially dry years--1975, 1979 and 1981. Eight years ago only 15 percent of winter wheat was sown on fields cultivated by means of non-mouldboard plowing. At that time the oblast produced an average of 21.7 quintals of grain per hectare. Four years later 60 percent of the area in winter crops was worked using this method and average yield increased to 27 quintals. Two years ago under severe drought conditions, unmatched during the last 40 years, all winter crops were sown after only a surface cultivation of soil. A yield of 29.5 quintals per hectare was achieved!

Let us attempt to summarize the results of introducing non-mouldboard plowing. In 8 years the oblast has received an additional 1.2 million tons of grain and 152 million rubles of net income. Labor productivity increased by 37 percent and production expenditures decreased by 24 percent. Now, soil-conservation plowless technologies have been developed for cultivating not only wheat but corn and even beets as well.



What is in the future for the development of the new method and what hinders it? An answer to this question can be provided to a certain extent by base enterprises created in all oblast rayons and supplied better than others with soil-conservation technology. The yield here is satisfying.

But in other of our enterprises there is a shortage of non-mouldboard equipment! We badly need broad cultivators-sweeps, disc and needle-shaped harrows and other equipment. It appears that the selection is a small one, yet its production is still badly organized. Even in our oblast, where non-mouldboard plowing has won a firm base, during the last 2 years orders for BDT-7 disc harrows, APK-2.5 units and ring-cleat rollers were filled by only 20 percent. Forty oblast enterprises simply have no disc harrows and in 104 enterprises the load per harrow is over 3,000 hectares as compared to the norm of 400.

We get the impression that USSR Minsel'khosmash [Ministry of Agricultural Machinery] in its technical policy stubbornly closes its eyes to tendencies developing in our and in international farming, lives in the past and continues to do what has been done for a long time.

But by knowing the financial possibilities of enterprises and the amount of metal available, a small group of specialists on the level of any, even an oblast, agro-industrial association or republic commission could precisely determine the need for new technology in every climatic zone.

Is this logical? Totally. But machine builders have sought "additional possibilities for increasing the output of counter-erosion equipment" only in word. It is paradoxical but true that each year over 200,000 plows but only 5,000 very needed heavy disc harrows were "forged." The production of plows could have been ceased long ago, as well as that of tractors, but sufficient numbers of BDT-7's were needed. We asked for this long ago, and not as an "additional measure" but as a firm course toward non-mouldboard technology.

The experience of Poltava farmers shows that for non-mouldboard plowing it is most effective to use units consisting of a sweep, a needle-shaped harrow and a needle-cleat rollers. Why couldn't all this equipment be combined in one machine? Today industry produces AKP-2.5 combination soil-cultivation units which perform several technological operations during a single run. The machines are adequate but production is organized poorly and they are delivered to the oblast one by one.

In general this is the situation regarding interrelations between village workers who have turned away from the plow and their "reliable" APK partners.

Now a few words about Sel'khozkhimiya [Agricultural Chemical Association]. Since plowless farming is more intensive the role of fertilizer naturally increases. Nevertheless, Sel'khozkhimiya usually just transports fertilizers into the fields, whereas the application is carried out by the enterprise itself. Here a gap occurs between operations. This cannot be tolerated.

Today in the oblast it is planned to apply no fewer than 12 tons of organic fertilizer per hectare. But the productivity of serial PRT-10 and PRT-16

spreaders does not achieve the uninterrupted operation of sweeps and discing equipment. Here agricultural machine building also did not consider the changes that have occurred in this farming practice. This forces farmers to seek solutions to the problem on their own.

At the request of oblast party and soviet organs, last year the USSR Council of Ministers allocated 40 KRAZ trucks for us to transform into spreaders. Increasing speed and the area encompassed as well as maneuverability enabled us to increase the productivity of this unit by a factor of 1.7. The quality of fertilizer application also improved. Why not practice this type of reequipping more widely in order to supply the village with more KRAZ trucks?

We also know that in Kharkov Oblast by utilizing local resources workers produced 500 spreaders of the RUN-16B type, which is used with the T-150K tractor. Each unit works 50 hectares per shift--a very high indicator. The use of these units in mechanized detachments with plowless cultivation would enable us to raise the use coefficient of disc harrows and cultivators-sweeps. But we do not have such spreaders although the plants of the USSR Ministry of Tractor and Agricultural Machine Building take technical documentation from Kharkov workers to set up a flow-line production of spreaders, especially since such machines are needed in all zones of the country.

Poltavian farmers greeted with approval the resolution of the CPSU Central Committee and USSR Council of Ministers, "On Measures to Further Improve the Technical Level and Quality of Machines and Equipment for Agriculture, to Improve Their Use and to Increase Their Production and Delivery in 1983-1990." It is also planned to increase the output of machines for non-mouldboard cultivation. We are convinced that now non-mouldboard plowing will win over even more supporters, that RAPO partners will be able to work in a more coordinated manner and that we will solve the problems that are now hindering our work.

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## AGRICULTURAL MACHINERY AND EQUIPMENT

### TRACTOR, EQUIPMENT MATCH IN POLTAVA OBLAST

Moscow EKONOMICHESKAYA GAZETA in Russian No 33, Aug 84 p 18

[Article by A. Likhoshvay, department chairman of Poltava Agricultural Institute and candidate of economic sciences: "How Many Machines a Tractor Needs"]

[Text] One of the main reserves for increasing the effectiveness and use of agricultural technology involves achieving a more correct ratio between power and working machines. As practical experience shows, under such circumstances productivity increases (average daily output per standard tractor) and expenditures for work done decrease.

At the same time, not all existing tractors are equipped with the necessary selection of working machines and equipment. Let us look at Poltava Oblast as an example. Here the growth pace of average annual costs of power machines was significantly higher than that of working machines. Even in a small region such as Mashevskiy Rayon there are great differences by kolkhozes in the degree to which tractors are supplied with working machines and equipment.

Thus, in Kolkhoz imeni Zhdanov and Rossiya Kolkhoz with almost the same fund supplies per hectare of agricultural land (724 and 711 rubles respectively) indicators for availability of agricultural machines for tractors were completely different (1:2.2, 1:0.7). In Rossiya Kolkhoz due to very low availability of machine sets for tractors the average daily output per standard tractor equalled 5.3 hectares, which was almost four hectares less than in Kolkhoz imeni Zhdanov, and expenditures per hectare turned out to be twice as high.

Increasing the output of working agricultural machines and equipment and improving the organization of material-technical supplies to kolkhozes and sovkhoses with the goal of achieving the optimal ratio between power and working machines (1:2.5-3.0) are priority goals. Their successful fulfillment must be foreseen in plans being elaborated now for the continued development of the agro-industrial complex.

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## AGRICULTURAL MACHINERY AND EQUIPMENT

### USE OF SWEEPS IN MOLDAVIA DISCUSSED

#### New Plowless Method Tested

Kishinev SEL'SKOYE KHOZYAYSTVO MOLDAVII in Russian No 5, May 83 p 28

[Article by V. Dukantoni, senior agronomist of Novyy Put' Sovkhoz of Kaushchanskiy Rayon: "For the First Time Without a Plow"]

[Text] In agricultural practice there is a firm belief that the only method for cultivating the soil before planting corn involves fall plowing. However, new scientific studies in our republic and beyond its borders have established that the given crop does not need annual fall plowing. The current situation will remain in effect for a certain period of time only with regard to those fields where the quality of farming is still low.

The new approach to soil cultivation for corn interested us and we decided to utilize it in our production. Last year on an area of 70 hectares in the sovkhoz corn was cultivated according to industrial technology without fall plowing, i.e. for the first time without a plow.

After the harvesting of predecessor vegetable crops the field was disced twice with the goal of loosening the top layer of soil and of crushing stubble and root remains. For this a T-150 tractor with a heavy BDT-7 disc harrow was used. Then a unit consisting of a K-700 tractor and an OPP-3.5 sweep carried out soil cultivation--the main cultivation operation--to a depth of 12-14 centimeters with simultaneous harrowing.

Serving as a control was a field where fall plowing was carried out to a depth of 28-30 centimeters and on which all other factors that determine yield were analagous to those on the test field.

In the course of vegetation corn looked the same on both fields. As for the end result, with fall plowing the grain yield was 49.5 quintals per hectare and with cultivation--51.4.

As we can see the increase was an insignificant one, but the fact alone that yield on the test plot was not inferior to the control speaks in favor of deep cultivation used as the basic means of cultivating the soil. After all, in comparison to fall plowing it required about half the expenditures.

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Commentary on Cultivation Methods

Kishinyov SEL'SKOYE KHOZYAYSTVO MOLDAVII in Russian No 4, Apr 84 p 22

[Article: "'For the First Time Without a Plow'"]

[Text] "For the First Time Without a Plow", an article published in the fifth issue of the journal in 1983, received a response from the Moldavian Scientific Research Institute on Corn and Sorghum. It was reported that the institute's tests on the use of sweep cultivation of soil for corn yielded approximately the same results as those achieved in Novyy Put' Sovkhoz of Kaushanskiy Rayon.

However, the response continues, during some years sweep cultivation decreased yield. While noting its advantages relative to labor expenditures, scientists mention a series of shortcomings--sweep cultivation "is less effective in the struggle against weeds, created problems during the application of organic and phosphorus fertilizers and decreases the effectiveness of soil herbicides."

"For this reason," they conclude, "we have no basis for confirming, as the article does, that fall plowing of corn fields is a temporary phenomenon."

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9 April 1985

## FORESTRY AND TIMBER

## MINISTER DETAILS TIMBER INDUSTRY PROGRESS, INADEQUACIES, TASKS

Moscow LESNAYA PROMYSHLENNOST' in Russian 29 Jan 85 p 2

[Article by M. Busygin, minister of the timber, pulp and paper and wood-processing industry of the USSR: "Shock Work To Complete the Five-Year Plan"]

[Text] Workers of the timber industry, like all Soviet people, began with immense enthusiasm the implementation of the economic and social tasks facing the branch in the final year of the five-year plan.

And in 1985 we will have large tasks. The overall volume of industrial output should increase by 4.9 percent, which is considerably higher than the average annual rate achieved during the past 4 years of the five-year plan.

The plan is oriented toward increasing the intensification of production and increasing its efficiency. More than 92 percent of the increase in output is to be achieved as a result of increasing labor productivity. It will be necessary to reduce the production cost of products by 0.75 percent as compared to the 1984 level. Here more than 70 percent of the savings on production costs will come from raising the technical level of production, introducing the achievements of science and technology and improving labor organization. As before, primary significance should be attached to increasing comprehensive utilization of timber resources, and increasing the production of technological chips and other effective substitutes for commercial timber. The output of these translated into round timber should be increased to 84.2 million cubic meters, which is 14.5 percent more than the 1984 level.

The planning assignments have been established and the tasks are clear. Requirements for efficient organization of labor and purposive work have come to the fore.

Last year in our industry there was improvement of the utilization of existing production capacities, machines and equipment, and material and labor resources. This made it possible to fulfill the plan for product sales, shipment of timber, and the production of paper, sets of wooden items for buildings, goods for cultural-domestic and household purposes, furniture, matches, wallpaper, paper goods and a number of other kinds of products.

The ministry has carried out the planning assignment for increasing labor productivity. All of the increase in industrial output was achieved as the result of this.

The timber procurement branch has essentially improved its work. It has shipped 211.3 million cubic meters of timber to the lower warehouses, or 8.8 million tons more than in 1983. An important role was played by successful fulfillment of socialist commitments for the 114th anniversary of the birthday of V. I. Lenin. By this date the timber procurement workers had shipped 106.2 million cubic meters of timber.

While maintaining and developing the high labor mood, the majority of collectives of timber procurement workers fulfilled their annual plans and socialist commitments ahead of schedule. Irkutsklesprom, Tyumen'lesprom, Sverdlesprom, Karelesprom, Ust'-ilimskiy LPK, Udmurtles and timber workers of the Ukraine, Belorussia and Estonia worked especially successfully.

The furniture industry has been operating stably. The annual plan for the output of furniture was fulfilled on 21 December 1984. The State Emblem of Quality was awarded to 48 percent of the items: more than 2 billion rubles' worth of new items of furniture were produced with improved quality.

During 4 years it produced and delivered for sale to the population 1.4 billion rubles' worth of goods for cultural and domestic purposes and household use in excess of the five-year assignment.

In the pulp and paper industry, as a result of the assimilation of new capacities at the Syktyvkar Timber Industry Combine and the Svetogorsk Pulp and Paper Combine the output of paper increased by 196,000 tons as compared to the 1983 level, including newsprint--by 539 million square meters.

But the main tasks facing the branch in 1984 were not carried out. In spite of the increase over the 1983 level in the volumes of production of commercial timber of 2.7 percent, pulp--3 percent, wide crossties--4 percent, chipboard--8.3 percent, fiberboard--5 percent, veneers--1.5 percent, and plant-manufactured wooden buildings--1.6 percent, the plan for these indicators was not fulfilled. The same is true of the assignment for product sales taking deliveries into account, which was fulfilled by only 95.6 percent. The main reason for the arrears was the inadequate mobilization of the labor collectives for maximum utilization of existing material, energy and labor resources. The required level of organizational and educational work is not provided in all sections.

The final year of the 11th Five-Year is a year of active preparation for the 27th CPSU Congress, the 40th anniversary of the Victory in the Great Patriotic War, and the 50th anniversary of the Stakhanovite movement. Workers of the timber industry are preparing especially actively for these famous dates.

Timber procurement workers, striving to make maximum use of the conditions of the winter period, have earmarked shipping 108 million cubic meters of timber for the 40th anniversary of the Victory. This means that by 9 May they must fulfill more than half of the annual assignment for the procurement and

shipment of timber. It is a difficult task, but last year's experience showed that the timber procurement workers are up to it. It is necessary, especially in the first quarter, to concentrate the efforts of every worker on the fulfillment of daily assignments, maximum utilization of technical equipment, and the provision of high discipline and organization in all sections.

The front runners in the competition are the brigades of P. Popov from the Komsomol'skiy Tyumen'lesprom Timber Industry Enterprise, L. Gnevashev from the Karabul'skiy Krasnoyarsklesprom Timber Industry Enterprise, V. Grigorenko from the Klyuchevskiy Dal'lesprom Timber Industry Enterprise, and A. Volkov of the Berezovskiy Sverdlesprom Timber Industry Enterprise. Among the enterprises that were initiators were the collectives of the Loyginskiy Timber Industry Enterprise, the Karellesprom and Boguchanles associations, the Balakhninskiy and Kondopozhskiy pulp and paper combines, the Yu. nevel' Association and many others.

Today the main task of the executives and party and trade union committees is to create conditions for highly productive labor and normal life, to take maximum advantage of the achievements of new technical equipment and technology, to disseminate advanced practice, to improve the quality of the products, and to save in all ways on all kinds of resources.

To manage well means to subtly increase labor productivity. This year it should increase by 3.3 percent.

Great possibilities lie in strongly formed brigades. Now almost 74 percent of the workers are working in them, and in 45 percent of the brigades the earnings are distributed with the application of the coefficient of labor participation. More than half of the volume of timber felling work is carried out by contracting brigades. But it is still too early to be complacent. We must constantly deal with the development of brigade forms of labor organization.

Taking into account the specific features of production, it is necessary to determine the quantitative composition and kinds of brigades, to increase the role of current and long-range plans, and to improve norm-setting and accounting.

Along with improvement of the brigade form, what is coming to the fore today is certification and streamlining of work stations, which makes it possible to reveal and more fully utilize reserves for economy. The great effectiveness of certification in our industry is clear from the example of the Dnepropetrovskdrev Association.

A most important task is thrifty expenditure of material and energy resources. It is necessary to establish strict control over their expenditure and storage and to close off all possible avenues of losses. To save on each kilogram of fuel and each kilowatt-hour of electric energy--this is what our party demands of us. We must arrange things so that not a single case of inefficient utilization of raw materials, processed materials, fuel or energy goes unnoticed, we must hold the guilty parties strictly responsible for overruns,

and we must introduce more extensively effective measures for moral and material incentives for economizing on materials.

We must also further disseminate the work experience of the collectives of the Kotlas and Solikamsk pulp and paper combines for reducing the weight of the products. This experience is being utilized by about 70 pulp and paper enterprises. The introduction of the experience has made it possible in the branch as a whole during the past 3 years to reduce the consumption of timber raw material by 4 million cubic meters.

In 1984 alone as a result of reducing the weight we reduced the expenditure of sodium sulfate by 20,000 tons, and soda ash by more than 4,000 tons, and we saved about 6,000 tons of sulfur, more than 2,000 gigacalories of thermal energy, and more than 400 million kilowatt-hours of electric energy. The reduction of the weight of the products in veneer, slab and furniture enterprises will make it possible to achieve a considerable savings on timber raw material.

Attaching great significance to the improvement of the utilization of timber raw material resources in the country and to more effective utilization of timber and its wastes in the national economy, the CPSU Central Committee and the USSR Council of Ministers adopted special decrees regarding these issues, which are program documents for the entire timber complex. In 1985 it is intended to utilize and sell 37 million cubic meters of timber wastes. The main area here is the output of industrial chips, whose production volume will be increased by more than 30 percent.

Responding with deeds to the appeal of the party to provide for all-round savings on processed materials, raw materials and fuel, timber industry workers have resolved to work no less than 2 days in 1985 using the resources that have been saved.

As in past years, a decisive role in the fulfillment of our plans in 1985 will be played by timber procurement workers. It is necessary to ship 212.5 million cubic meters. At first glance this increase in the volumes as compared to 1984 seems great. But there is no justification whatsoever for being complacent and lessening our efforts. No big leap, but only regular work from the first days of each month produces the necessary results!

The board of the ministry and the presidium of the trade union central committee gave a high evaluation to the initiative of the leading collectives who developed competition for shipping 108 million cubic meters of timber by 9 May. They adopted the decree, "On Socialist Competition of Timber Procurement Workers." Economic and trade union leaders should conduct organizational work in the brigades, shop sections, timber points, enterprises and associations and determine the monthly goals of socialist competition in each subdivision. The conditions of the competition should be developed, publicity should be provided, and measures of material and moral incentives should be determined.

Timber procurement production is saturated with various kinds of highly productive machines, mechanisms and equipment. To shift manual labor to the



shoulders of machines is the slogan of the day. This year it is intended to increase machine felling of trees to 51 million cubic meters, which is 15 percent more than the 1984 level, and to increase the skidding of trees with felling-skidding machines and tractors with hydraulic grasps--to 62 million cubic meters, and the removal of the branches from the trunks--to 63 million cubic meters. These assignments must be regarded as minimal. They can and should be covered. First of all through increasing the coefficient of shift work of the mechanisms.

One of the main tasks that must be carried out by timber procurement workers in 1985 is maximum provision of the consumers with commercial timber. It is necessary to increase the output of round timber by 11.9 million cubic meters or 7.8 percent as compared to the 1984 level. It is necessary to achieve not only efficient organization of production in procurements and shipments, but also to carry out high-quality finishing of the timber, increasing the yield of round timber material. Daily concern for fulfilling the assortment plan and observance of contractual commitments for deliveries should become an inviolable law.

The results of the work of the enterprises for processing timber will depend largely on how we carry out this task in the timber procurement branch.

Large and responsible tasks stand before the pulp and paper industry, where the volume of pulp production should increase by 7.3 percent, cardboard--by more than 12 percent, and paper--by 6 percent. The tasks are not easy. For in 1984 the Amurskiy and Ust-Ilimskiy timber industry complexes and the Segezhskiy and Solombal'skiy combines alone failed to deliver to the national economy 167,000 tons of pulp. It is possible to achieve the earmarked goals through improvement of technological processes and increased volumes of processing of timber of deciduous varieties and scrap paper.

Not all is well in the work of the sawmill operators. They failed to deliver more than 1.7 million cubic meters of lumber as compared to the 1984 plan. And this year it will be necessary to increase the output of lumber by 4 million cubic meters. It is the duty of the sawmill operators in cooperation with the timber procurement workers to achieve fulfillment of the plan that has been established.

In 1985 there are to be more rapid rates of growth of the production of effective substitutes for commercial timber. As a result, the output of chipboard slabs should increase by 340,000 cubic meters, and fiberboard--by more than 30 million square meters. The slab industry has capacities for providing for this growth. Here major attention should be concentrated on eliminating organizational and technical problems at enterprises that are lagging behind.

This pertains also to veneer production. At the same time an important role should be played by complete provision of raw material for the enterprises. Managers of timber industry enterprises should be completely responsible when it comes to this matter.



This year it is intended to increase the output of consumer goods, to expand their assortment and to improve their quality.

This year on an average for the ministry the output of consumer goods should amount to 1 ruble 34 kopecks per 1 ruble of wage fund.

Almost 90 percent of the overall volume of production of consumer goods in the ministry will be goods for cultural and domestic purposes and household use, of which no less than 42.3 percent should be produced in the highest quality category.

The branch is doing a lot of building. In 1984 production capacities were introduced for shipping 3.2 million cubic meters of timber, for producing lumber in an amount of 580,000 cubic meters, pulp--almost 20,000 tons, woodchip slabs--175,000 cubic meters, and furniture--233 million rubles' worth. In addition to all this, 113,000 square meters of dwelling space were constructed in excess of the plan, and the plan was a start-up of facilities for social and cultural-domestic purposes was fulfilled. At the same time we failed to assimilate 195 million rubles' worth of capital investments, including 77 million for construction and installation work. As a result, a number of facilities for producing paper, cardboard, veneer and pulp and for shipping timber have not yet been constructed.

This year the assignments are more difficult. It is necessary to carry out almost 915 million rubles' worth of construction and installation work.

A considerable growth of the volumes of construction as envisioned in the timber procurement industry. Here the scope of work will double as compared to last year. It will be necessary to begin construction on 20 new timber procurement enterprises and to introduce capacities for shipping more than 3.5 million cubic meters of timber.

A large program of housing and cultural-domestic construction is envisioned. More than 1.1 million square meters of residential buildings are to be introduced as well as general educational schools to accommodate 3,700 and preschool institutions to accommodate 4,700.

Carrying out this construction program will require that the attention of builders, installers and clients be directed primarily toward start-up objects. The capacities should be put into operation comprehensively--along with objects for production purposes and social, cultural and domestic purposes. Here it is necessary to considerably improve the quality of construction.

Heartily supporting the appeal of the party to work hard and utilize resources effectively, the workers and employees of all subdivisions of the timber complex are filled with resolve to devote snock work in the final year of the five-year plan to providing a worthy greeting to the 27th CPSU Congress and thus create a reliable stockpile for further development of the industry under the 12th Five-Year Plan.

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## LAND RECLAMATION AND WATER MANAGEMENT

### MINISTER DISCUSSES RECLAMATION PROJECTS IN USSR

Moscow SOVETY NARODNYKH DEPUTATOV in Russian No 1, Jan 85 pp 7-14

[Article by N. Vasil'yev, USSR minister of land reclamation and water resources: "The Land Reclamation Program--A Nationwide Affair"]

[Text] The October (1984) Plenum of the CPSU Central Committee became a large event in the life of our party and people. It approved the long-term program for the development of land reclamation and increased return from restored land for purposes of steadily increasing the production of agricultural products in order to stably supply the Soviet people with food products and industry with raw material.

This question was raised at the plenum of the party Central Committee on the personal initiative of general secretary of the CPSU Central Committee, chairman of the Presidium of the USSR Supreme Soviet, Comrade K. U. Chernenko. In his fact-filled program speech of the plenum he earmarked the main tasks of the new stage of the activity for fulfilling the country's Food Program and further improving the well-being of the Soviet people.

The party regards land reclamation, the most important means of intensification of agricultural production, as one of the main areas of the modern agrarian policy. Many years of practice in farming convince us that without land reclamation and without improvement of the basic means of production of agriculture, the land, no expenditures will produce the proper return under our natural and climatic conditions.

In our country about 60 percent of the arable land is in the arid and insufficiently moist zones, 35 percent--in overmoist zones, and only 5 percent--in a relatively favorable zone. We have had the most severe droughts four times during the past 10 years. At the same time a number of regions of the country (the Nonchernozem Zone of the RSFSR, the western part of the Ukraine, Belorussia, the Baltic republics and the Far East) have suffered from a surplus of moisture. And this has again confirmed that assured growth of the harvest is possible only on the basis of extensive development of land reclamation.

We are doing a good deal in this area. Since the May (1966) Plenum of the CPSU Central Committee, which was devoted to land reclamation, we have

invested about 115 billion rubles' worth of capital investments in it. We have created powerful water management organizations which are supplied with the necessary technical equipment. During this time the country has constructed 118 large water reservoirs and reconstructed, put into operation or brought to the stage of construction dozens of canals, including such widely known ones as the Karakum, northern Crimean, Dnepr-Donbass, Bol'shoy Stavropol, and Saratov. The area of irrigated land has increased from 9.8 to 19 million hectares, and drained land--from 7.5 to 14 million hectares. The value of crop-growing products produced on the new land during 1965-1983 increased from 6.2 to 16.3 billion rubles, and the proportion of these products in the overall production increased from 20 to 33 percent. We now raise on reclaimed land all of the raw cotton and rice, 75 percent of the vegetables, about half of the fruit and grapes, 40 percent of the corn grain, and 25 percent of the coarse and juicy feeds. The irrigated hectare produces 5.9 times more products and the drained hectare produces 1.5 times more than the unimproved hectare does.

The proportion of feed crops is constantly growing in the structure of planted areas on reclaimed land. In 1983 37 million tons of feed units, almost a sixfold increase over 1965, were grown on them.

The productivity of all other agricultural crops is also increasing: while during 1966-1970 the productivity of grain crops on irrigated land amounted to 19.2 quintals per hectare, in 1981-1983 it was 33.3 quintals per hectare. High yields are raised on irrigated land by the farms of the Ukraine and Uzbekistan. In Crimea Oblast in 1983 they obtained 669 quintals of root crops per hectare, 77 quintals of hay from perennial grasses, 436 quintals of green mass from alfalfa, and 378 quintals of corn for silage.

In 1983 the farms of Volgograd, Saratov, Transcarpathian, Ivano-Frankovo, Kherson, and Chirchik oblasts, the Kalmyk ASSR, Stavropol Krai, the Kirghiz SSR, the Tajik SSR, and the Turkmen SSR mowed 70-80 quintals of alfalfa hay per hectare.

Still it was noted at the plenum of the CPSU Central Committee that even with all the positive that had been done in land reclamation we cannot but note that the possibilities that lie in the reclaimed land are far from being fully utilized. In 1983 35 percent of the farms received from irrigated land only 20 quintals of grain crops per hectare, one-fifth of them gathered only up to 30 quintals of hay, and 64 percent of them harvested less than 150 quintals of vegetables per hectare. Such farms exist in all the republics, krais and oblasts. Drained land is not yet producing the proper return either, especially on the farms of the Nonchernozem Zone of the RSFSR.

The report of the member of the Politburo of the CPSU Central Committee, chairman of the USSR Council of Ministers. Comrade N. A. Tikhonov gave a developed analysis of the work conducted in the country for land reclamation and disclosed a new large-scale program developed instructions from the Politburo of the CPSU Central Committee for further development of land reclamation and increased effectiveness of the utilization of flooded land.

The decisions of the plenum envision expansion of the scale and acceleration of the rates of water management construction. Measures have been earmarked for qualitative improvement of existing irrigation systems, improvement of the meliorative condition of the land, strengthening of the service for operating water management systems and structures so as to provide for stable growth of the production of grain, feeds, vegetables, fruits and animal husbandry products.

Land reclamation workers of the country and all Soviet people greeted the decisions of the October (1984) Plenum of the CPSU Central Committee with a feeling of deep gratitude, and accepted the immense program for the development of land reclamation as a matter extremely close to their hearts. Its further development will make it possible to create highly intensive and stable agricultural production in the country, which on the whole will exert a positive influence on increasing the effectiveness of all public production. This program has no equals not only in the history of our state, but even abroad.

A most important task for the next few years is improvement of the utilization of the country's existing reclaimed land supply. Here questions of the return from reclaimed land are placed on a new basis. Here too an important role is played by the decision to transfer the intrafarm network and structures that are handled by the kolkhozes and sovkhozes to the books of the water management organizations. The transfer will take place with the agreement of the farms during 1986-1990. It is also envisioned that the financing of the expenditures on the maintenance and repair of the intrafarm network and structures will be provided in the amount of 30 percent from funds from the state budget, and 70 percent of the expenditures will be covered through funds from the kolkhozes, sovkhozes and other state agricultural enterprises.

The effectiveness of the utilization of restored land will depend largely on the technical condition of the network and structures, and also on the level of operation of the land reclamation systems. Practice shows that to utilize them correctly and keep them in proper condition can be done by large organizations that are equipped with special technical equipment and staffed with highly qualified personnel.

A decision was also made to establish clear-cut contractual commitments on the part of the kolkhozes, sovkhozes, water management organizations, operations services and rayon agroindustrial associations concerning the utilization of irrigated and drained land.

Water management organizations and enterprises of Sel'khozkhimiya and Sel'khoztekhnika should provide for the maintenance of land reclamation systems and irrigation equipment in working condition, and provide the necessary quantities of mineral fertilizers and means of plant protection. And the farms are obliged to provide within the established time periods for reaching the planned, and then the projected productivity, and achieving the production of the corresponding volumes of agricultural products.

In those cases where the farms do not carry out their commitments, violate the complex of agrotechnical measures and organize their work poorly, which leads



to a shortage in the harvest of agricultural products, they will bear serious material responsibility. Certain economic sanctions will also be applied to water management organizations and enterprises of Sel'khoztekhnika and Sel'khozkhimiya when they fail to carry out the commitments they have made.

The strengthening of contractual relations will make it possible to put an end to the lack of personal responsibility in the utilization of irrigated and drained land and considerably increase their effectiveness.

The long-term program envisions large measures for accelerating scientific and technical progress in land reclamation. There will be further development of the utilization of wide-reach sprinkling machines, including the new highly productive modifications, mechanization of surface watering, and the application of block-set pumping stations. There will be expansion of the construction of closed drainage and polder and drainage-watering systems.

A significant step will be taken for expanding the utilization of polymer materials in land reclamation construction. The application of plastic corrugated pipes instead of the earthenware ones which are now being used will make it possible to considerably reduce the labor-intensiveness of the corresponding work and improve the quality of the drainage. Polymer materials will be extensively used in drop, subsoil and small dispersion irrigation. There will be greater application of laser devices for controlling earthmoving machines.

There will be further development and introduction of means of automation for water distribution and irrigation, which will contribute to increasing labor productivity and reducing the expenditure of water; irrigation farming will be by nature a planned and efficiently controlled production process with the introduction of harvest programming. Under the 12th and 13th Five-Year Plans it is intended to change over to operation under automatic conditions of pumping stations, hydrotechnical structures, and also more than 50,000 sprinkling machines, which will then be able to operate without the participation of sprinkling workers.

There is to be extensive introduction of the aerospace method of long-distance exploration in order to obtain operational data concerning the moisture content and salinity of the soil, and the condition of the canals and water reservoirs. This will make it possible to control production processes on reclaimed land much better.

Calculations show that by the end of this century it will be necessary to receive from reclaimed land no less than 55-60 million tons of grain, including 18-20 million tons of corn grain. The areas planted in feed crops on improved land will be increased to 30 million hectares, and it is intended to obtain from them no less than 115-125 million tons of feed units. By 1990 it is planned to provide further production of vegetables and early potatoes on irrigated land in volumes that will satisfy the population of large cities and industrial centers.

An important task is to provide the sovkhoses and sovkhoses of the country with seeds of perennial grasses, hybrid corn, sugar beets and soybeans. The



production of raw cotton will be increased basically as the result of expanding the areas planted in fine-fibered strains on the basis of further comprehensive assimilation of large areas of land in the Central Asian republics. On irrigated land of the Northern Caucasus, the Ukraine, Moldavia, the Central Asian republics and Transcaucasia by the year 2000 we will have achieved the production of grapes in a volume of up to 8 million tons, and fruit and vegetable crops--up to 9.8 million tons. The implementation of the earmarked programs will require increasing the area of irrigated land to 30-32 million hectares by the year 2000, and drained land--to 19-21 million hectares.

In the long-term program for the development of restored land a great deal of attention is devoted to the reconstruction of old land reclamation systems. The goal has been set to conduct this work on an area of 5.6 million hectares before 1990, which will make it possible to put all currently existing irrigated land in order.

The allotment of the capital investments necessary for successful implementation of the long-term program for land reclamation is being envisioned. Under the 12th Five-Year Plan more than 50 billion rubles will be spent for this. This will make it possible to improve about 7 million hectares of land. There will be further development of the production base of operational and construction water management organizations, repair and mechanics plants, and enterprises for producing items made of polymers. The funds, machines, automotive transportation, power pumping and electrical equipment as well as construction materials necessary for this are being allotted.

At the plenum of the CPSU Central Committee land reclamation workers were criticized sharply for dispersing forces and funds among numerous small projects, for their large volume of incomplete construction and long time periods for the construction of a whole number of most important projects, for cases of poor quality of construction and release of projects with imperfections, and for their slow growth of labor productivity. The utilization of land reclamation equipment also leaves something to be desired. The output from the mechanisms is increasing slowly and there is a great deal of idle time within the shifts. In a whole number of plans for land reclamation systems there are mistakes and omissions which reduce their reliability and lower their technical level and lead to a shortage in the harvest of products. All this was discussed especially pointedly and in principle at the plenum of the CPSU Central Committee. The country's land reclamation workers will have to improve the planning and construction of irrigation and drainage systems in the shortest possible periods of time and increase the effectiveness of the renewed land.

One should say that because of the constant attention of the CPSU Central Committee and the government, an immense economic potential has been placed in the service of land reclamation, a powerful production base has been created and skilled personnel have been trained. Stable collectives of land reclamation workers which exist in various zones of the country are provided with modern technical equipment, armed with science, and enriched with the

experience of water management construction and the operation of land reclamation systems.

During recent years the fulfillment of plans for capital construction has improved. In 1983 we assimilated almost 7.23 billion rubles' worth of capital investments, which amounts to 102 percent of the plan and 107 percent of the 1982 level. Assignments for construction-installation and contracting work were overfulfilled. The plan was fulfilled for the introduction of irrigated and drained land, improvement of their amelioration condition, restructuring of the irrigation network, capital leveling, watering pastures, and construction of main water lines. Industry of the branch overfulfilled plans for the production of products and repair of earthmoving equipment and automotive transportation. Last year plans were fulfilled for contracting and construction-installation work, the start-up of new land reclamation systems, amelioration work on land that did not require drainage, qualitative improvement of the land, the laying of main water lines, and so forth.

A typical aspect of the long-term program is the fact that we are beginning to implement it under conditions of a shortage of water resources in a number of southern regions of the country. Therefore in addition to the earmarked measures for economizing on water, it is suggested that we construct canals for diverting part of the flow from northern and Siberian rivers, and also the Volga-Don, Rostov-Krasnodar, Volga-Chogray, Danube-Nisporeny, and Danube-Dnepr, that we cover the Dnepr-Bug estuary and so forth. The implementation of these plans will make it possible to create large areas of irrigation in the arid regions of the Volga area, the Northern Caucasus, the south of the Ukraine and the Central Chernozem oblasts.

Diverting water from the Volga into the Don in a volume of 5.5 billion cubic meters will make it possible to introduce an additional 1.1 million hectares of irrigated land. They will make it possible to raise corn for grain, soybeans and also feed crops in the arid zone of the RSFSR.

Large measures have been earmarked for solving social problems in rural areas and restructuring rural population points. In forthcoming five-year plans it is intended to considerably develop rural water lines for centralized water supply of the population, agricultural enterprises and animal husbandry. We shall construct 27,000 kilometers of group water lines, 150,000 kilometers of branch and local networks, and 200,000 water catchment wells will be dug. By the year 2000 almost all rural residents will have running water in their homes, and the per capita consumption of water will increase from 50 liters a day in 1983 to 150 liters by the beginning of the 21st century.

A primary task for land reclamation workers is to increase the production of feeds for livestock as much as possible. A task has been set to create at animal husbandry complexes irrigated feed lands where one can raise perennial grasses, root crops and silage crops. To this end it is intended to allot the farms all the necessary technical equipment, mineral fertilizers and chemical means of plant protection. The areas of irrigated and drained land will increase in all union republics, krays and oblasts. The new areas are mainly in the RSFSR--during the decade 3.3 million hectares will be introduced. In the Volga area the production of grain, feeds, vegetables and melon crops on

renewed land will increase considerably. To do this it will be necessary to complete the construction of irrigation systems: in Saratov Oblast--the Komsomol and Volga area, and in Volgograd Oblast--the Gorodishchenskaya. The Krasnodar irrigation system will go into operation. The construction of the Bol'shoy Stavropol Canal is continuing, and 220,000 hectares will be irrigated in its zone. The areas of improved land will also increase in Kuybyshev Oblast. Land reclamation work will be accelerated in such large promising regions of Siberia as Kulunda and Baraba. More than 100,000 hectares of previously unproductive Azov floodlands have been transformed into a large rice-growing base in the Kuban. It is growing.

In the Ukraine during the decade no less than a million hectares of new land will be introduced. One of the best irrigation systems, the Kakhovskaya, when the construction is finally complete, will irrigate 750,000 hectares of drained land in the south of the republic. The construction of the first section of the Azov system, which is a continuation of the Kakhovskaya, will be started. The water artery of the Northern Crimean Canal which is 400 kilometers long has already brought to life 200,000 hectares in the steppe area of the Crimea. Construction of its third section will be continued.

A special decree concerning the construction of the Dnepr-Bug hydraulic center envisions covering the Dnepr-Bug estuary. This will make it possible to irrigate approximately a million hectares.

In Uzbekistan it will be necessary to put 900,000 hectares of irrigated land into operation. Along with the development of cotton growing, the production of animal husbandry products, vegetables and melon crops will increase at accelerated rates there. Special attention is being devoted to expanding the production of corn on irrigated land. In order to provide water for the land, the construction of the Tuya-Muyunskiy hydraulic center will be completed. Hundreds of new sovkhoses and well-arranged villages will spring up on the restored land.

In Kazakhstan 820,000 hectares of irrigated land will be put into operation. It is intended to create specialized zones for cultivating soybeans on irrigated sections and to carry out comprehensive construction of sovkhoses that specialize in raising them.

In Azerbaijan it is intended to introduce 160,000 hectares of new land, a considerable proportion of which is intended for vineyards. In Georgia the areas of improved land will be expanded by 120,000 hectares, in Armenia--by no less than 60,000 hectares. Land reclamation workers of Moldavia are faced with large tasks. Here it will be necessary during the decade to introduce 240,000 hectares of irrigated land, of which 35,000-40,000 will go for orchards and vineyards. In Kirghizia under the 11th Five-Year Plan it will be necessary to complete the construction of the Papanskoye water reservoir, which will bring to life 15,000 hectares of new land. It is intended to use a good deal of this area for corn, sugar beets and feed crops.

Construction is being completed of the Dangarinskiy tunnel in Tajikistan, through which water will be sent from the water reservoir of the Nurekskaya

GES for irrigating the Dagarinskaya Valley. It is also planned to construct a water reservoir on the Kafirnigan River, a tributary of the Amudarya.

The increase in irrigated areas in Turkmenia during the decade will amount to 180,000-190,000 hectares. Construction will be completed on the Karakumskiy Canal, on the basis of which they will expand the areas planted in fine-fibered cotton and grapes. It is intended to complete the construction of the Tashauzskiy Canal near the lower reaches of the Amudarya on the basis of the Tuya-Muyunskoye water reservoir.

The party regards the large amounts of creative work for increasing the fertility of the land as a shock area for the next few years. As Comrade K. U. Chernenko noted at the October (1984) Plenum of the CPSU Central Committee, success will depend on the understanding on the part of each worker and each collective of the political significance of the tasks that have been set, and on the organization of the work in all of the sections. It is necessary to concentrate organizational and political work of the party organizations and the activity of Soviet and management agencies here.

The plenum set important tasks--and this should be especially emphasized--for the soviets of people's deputies. In conjunction with management agencies they are called upon to take the necessary measure directed toward implementing the decisions concerning improvement of land reclamation, organization of water management construction, strengthening of control over the effectiveness of capital investments, reduction of time periods for construction and assimilation of construction capacities.

It is their direct concern to provide for comprehensive construction on the newly assimilated land, including agricultural buildup, road construction, and also the introduction of modern housing, children's institutions and objects for cultural and domestic purposes.

The interests of the matter require that under current conditions, when the construction of new land reclamation systems has reached a large scale in our country, work for qualitative improvement of systems that are already constructed through their reconstruction and technical re-equipment has come to the fore. Nor should we forget about the organization of the operation of land reclamation systems. Soviet agencies of Kaliningrad Oblast are displaying a great deal of concern for this aspect of the matter. By a decision of the ispolkom of the oblast soviet, unified rayon and interrasyon repair and operations bases were created and became part of the RAPO. They have been in operation since 1983 and, as experience shows, they are successful in providing for the repair and technical servicing of land reclamation systems and machines.

We see a large reserve for increasing the return from capital investments in land reclamation in extending amelioration work. A useful initiative has been displayed by Soviet, agricultural and land reclamation organizations of Tyumen Oblast which, having created specialized detachments for amelioration work, have been able in the past 3 years to bring 150,000 hectares of new and recultivated land into recirculation. And all of the expenditures have already been recouped through the additional yield. The RSFSR Council of



Ministers has generalized this experience and recommended that it be used in other regions of the country.

The value of the experience of the Tyumen workers consists in that they conduct the work on unified areas where they use as a basis the improved hectare where drainage and the entire complex of agrotechnical measures that provide for its high productivity have already been carried out.

Land reclamation work and the utilization of renewed land is under the constant control of party and Soviet agencies in Stavropol Kray. Local soviets have done a great deal in order to establish the zonal system of farming. It devotes special attention to advancing the art of farming, improving the structure of the planted areas, expanding water management construction, introducing crop rotations, increasing the effectiveness of irrigation farming and improving the service for operating irrigation systems.

Previously in Stavropol Kray land reclamation construction was carried out by two small organizations. On the initiative of the party kraykom and the ispolkom of the kray soviet, the Stavropol'vodstroy Association was created. It includes specialized trusts and mobile mechanized columns which annually perform water management work through their own forces in an amount of 115 million rubles, or more than 4 times as much as was done before the beginning of the extensive development of land reclamation work in the kray.

Local agencies of authority are devoted a great deal of attention to implementing the plans of the main water management project--the Bol'shoy Stavropol Canal, which goes through the more arid regions of the kray. Skilled machine operators, builders and workers in other specialties have been sent to help the land reclamation workers in its construction. The construction of the canal has truly become a matter for the entire kray. In especially important sections of the construction project deputy posts and groups have been created, which check on the course of the work, help to arrange the life of the land reclamation workers, organize socialist competition, disseminate advanced experience, and instill in the workers the feeling of ownership and high responsibility for the matters entrusted to them.

But one should also mention that in a number of places the Soviet agencies are still not rendering enough assistance to land reclamation workers and are not doing very much to make sure that the restored hectare works at full force. This reproach can be addressed first of all to agencies of authority of Pskov, Kostroma, Kalinin, Novgorod, Kirov, Gorkiy, and Ivanovo oblasts. Many farms here are still receiving small yields from reclaimed land. There is no doubt that this situation must be rectified. Here it is necessary to considerably increase the role of land reclamation and water management administrations of the ispolkoms. This is our common concern.

There is no doubt that the implementation of the long-term land reclamation program will become a truly nationwide matter. This is a most important economic and political task. Carrying it out will contribute actively to the stable development of the agrarian sector of the economy and to further improvement of the well-being of the people.

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## LAND RECLAMATION AND WATER MANAGEMENT

### GOSPLAN MEMBER STRESSES LAND RECLAMATION

Moscow PLANOVYE KHOZYAYSTVO in Russian No 1, Jan 85 pp 3-11

[Article by P. Paskar', first deputy chairman of the USSR Gosplan: "Land Reclamation--A Decisive Factor in Stable Growth of the Country's Food Supply"]

[Text] The country has entered another year, the final year of the 11th Five-Year Plan. At the October (1984) Plenum of the CPSU Central Committee, which approved the Long-Term Program for Land Reclamation, they comprehensively substantiated the next tasks of the party and the people in implementing the Food Program.

The decree of the plenum and the brilliant speech there by General Secretary of the CPSU Central Committee, Chairman of the Presidium of the USSR Supreme Soviet K. U. Chernenko shows the purposiveness and consistency with which the party is adhering to the course toward steadily raising the standard of living of the people.

A good deal has been done in this area since the May (1982) Plenum of the CPSU Central Committee, which adopted the Food Program.

The production of agricultural products increased considerably, which had a positive effect on the work of the processing branches of the country's agroindustrial complex, and the supply of food products to the population improved. In state and cooperative trade there was an increase in the sale of meat products, whole milk products, animal and vegetable oil, teas, potatoes, vegetables and fruits.

The successes that have been achieved are the result of the self-sacrificing and difficult labor of the workers of the fields and farms, and the hard organizational and political work on the part of party committees, soviet and economic agencies in rural areas, and labor collectives in industry, construction, transportation and the entire national economy.

In 1984 many farms of the Kuban, Stavropol, Altay and Omsk oblasts, the Ukraine, Belorussia, Moldavia, the Baltic republics, and a number of oblasts of Kazakhstan raised a fairly good harvest of grain crops, potatoes, vegetables, fruits and other products, and they fulfilled and overfulfilled their plans for the sale of products to the state ahead of schedule.

According to preliminary data the gross agricultural output in 1984 as compared to the average annual volume for the 10th Five-Year Plan will increase by more than 10 billion rubles. We shall procure more livestock and poultry, milk, eggs and vegetables than in 1983, prepare more silage, haylage and feed root crops, and store up more grain forage.

But what has been achieved gives us no reason for complacency. The rates and quality of the work of branches of the agroindustrial complex, and especially agriculture, can and should be much higher.

Such a self-critical approach ensues from the point that was made to the effect that with all of the positive results achieved in recent years, the crisis in the supply of the population of many cities with food products has still not been removed.

In his speech at the Plenum Comrade K. U. Chernenko noted that "the problems which life is setting on the path to transforming agriculture into a highly developed sector of the economy require new and more effective solutions. And we are not speaking about changing the emphasis in our directives, but about a search for truly innovative and creative approaches."<sup>1</sup>

An example of precisely this kind of an approach is the large-scale development of land reclamation, which the party Central Committee regards as a decisive factor in further advancing agriculture and steadily increasing the country's food supply.

The course toward accelerated development of land reclamation is important for our country because the majority of agricultural land is located in unfavorable natural conditions. From this standpoint the most difficult problem is moisture supply in the soil. Along with certain overmoist regions, where the quantity of annual precipitation reaches 1,000 millimeters, in Central Asia and southern Kazakhstan there are only 80-150 millimeters of precipitation. Two-thirds of the overall area of land in agricultural use is in the zone with inadequate moisture. The difficult conditions for farming in our country are shown by the fact that on 40 percent of the land there is less than 400 millimeters of precipitation, and there are more than 700 millimeters on only 1 percent of the land. For comparison one must say that in the United States 700 millimeters of precipitation and more fall on half of all of the plowed land. We practically do not have years in which one and sometimes several important agricultural regions at once are not subjected to one degree or another to the influences of drought.

It is also necessary to take into account the fact that the zone with inadequate moisture includes such large regions of the country as the Northern Caucasus, the steppe part of the Ukraine, the Volga area, and the virgin regions of Siberia and Kazakhstan which provide for most of the grain that is raised and goes into the state resources.

The meteorological conditions have an unfavorable effect both on the level and on the stability of the production of agricultural products. And although the

volume of production of farming products is increasing steadily in the country, the fluctuations remain extremely appreciable here.

Fluctuations in the volume of agricultural production take place also in the overmoist zone, where the planted areas, especially those planted in grain crops, suffer from an excess of moisture.

To weaken the influence of the unfavorable natural conditions on the country's agriculture is the task set by the party Central Committee as one of the most important ones, and the long-term program for land reclamation which was approved by the October (1984) Plenum of the CPSU Central Committee is considered by the party to be a shock area in the next few years.

The role played by land reclamation in the most rapid increase in the effectiveness of agricultural production and its changeover to a stable basis has been clear before. Even during the first years of Soviet power the struggle against drought was recognized as a matter of primary importance. But the ways and means of conducting work for land reclamation in various stages of the development of the country's economy have been determined by concrete conditions. The course toward carrying out extensive land reclamation on the scale of the country was adopted in 1966 at the May Plenum of the CPSU Central Committee. During the past period, including the current five-year plan, about 115 billion rubles' worth of capital investments have been used for land reclamation. Large problems have been solved concerning a radical restructuring of the entire system of land reclamation, strengthening of the material and technical base of water management, planning and scientific research organizations, increasing the effectiveness of the utilization of irrigated and drained land, and improving the system of training of land reclamation personnel. All this has made it possible to expand the areas of irrigated and drained land from 17 to 33 million hectares. Such a scope and rates of water management construction have never been known before in world practice. The construction of the Karakum Canal, the transformation of the Golodnaya, Dzhizakskaya and Karshinskaya steppes, the assimilation of the floodlands of the Kuban and the marshy areas in the Ukrainian and Belorussian forested areas deserve to be called the construction projects of the century.

Because of the efforts of the party and the Soviet people land reclamation has begun to play an extremely essential role in increasing the production of agricultural products and is increasingly becoming a reliable guarantee of high and stable yields. We now receive from reclaimed land about 33 percent of the overall volume of crop-growing products, all of the cotton and rice, 50 percent of the fruits and grapes, about 40 percent of the corn grain, 75 percent of the vegetables and a considerable proportion of the feeds.

It was emphasized at the October Plenum of the CPSU Central Committee that while there are certain positive results in the implementation of the Food Program, the crisis in the supply of the population of many cities with food products has still not been removed. Increasing the production of agricultural products depends largely on the level of development of farming. This is why today the party is raising the question of large-scale development of land reclamation work.

The decree of the CPSU Central Committee and the USSR Council of Ministers, "On the Long-Term Program for Land Reclamation and Increasing the Effectiveness of Reclaimed Land for Purposes of Steadily Increasing the Country's Food Supply," earmarks the main directions for further development of land reclamation up to the year 2000 and the tasks for implementing the Long-Term Program in the union republics.

The Long-Term Program earmarks:

to provide for further expansion of irrigated and drained land in order to develop feed production as the leading area in the utilization of reclaimed land, to increase production of grain on this land, mainly corn, industrial crops, vegetables, fruits and grapes, and to create a guaranteed base for seed growing of corn, alfalfa, sugar beets and soybeans;

to complete by 1990 the basic construction of irrigation and drainage systems in order to create a stable feed base for large animal husbandry complexes and zones of guaranteed production of vegetables and early potatoes around cities and industrial centers;

to create zones of stable production of corn grain on irrigated land in the Northern Caucasus, the south of the Ukraine, Kazakhstan, Moldavia, the republics of Central Asia and Transcaucasia. To increase the production of millet on irrigated land in the Volga area and the Kazakh SSR;

to carry out as a priority the reconstruction of existing rice irrigation systems in the Northern Caucasus, the lower Volga area, Maritime Kray, the south of the Ukraine and Central Asia.

In the RSFSR they intend to expand the area of irrigated land to 10-11 million hectares and drained land--to 8-8.5 million, and to create zones for commercial production of corn grain on irrigated land in the Northern Caucasus and the lower Volga area. In the Nonchernozem Zone of the RSFSR they will continue to drain land, reconstruct outdated land reclamation systems and conduct technical cultivation work. In the Ukrainian SSR the area of irrigated land should increase to 4-4.2 million hectares and drained land--to 3.9-4 million hectares. In the Belorussian SSR it is intended to increase the area of drained land to 3-3.2 million hectares and irrigated land to 0.3-0.4 million hectares. In the Uzbek SSR the area of irrigated land will increase to 5-5.5 million hectares. Work for improving the condition of irrigated land will become considerably more active. We shall continue comprehensive assimilation of the Karshinskaya and Dzhizakskaya steppes, and the Karaulvazarskiy and Kizilinskiy irrigation areas. Measures will be conducted for improving the water distribution in the Amudarya River. In the Kazakh SSR it is intended to increase the area of irrigated land to 3-3.5 million hectares. They shall expand the zones for producing corn grain, sugar beets and feeds.

The decree earmarked concrete assignments for land reclamation and in the other union republics as well, and also in the Nonchernozem Zone of the RSFSR, Siberia, the Far East and the forest area of the Ukraine.



In order to carry out the assignments for land irrigation, during 1986-2000 it is intended to implement large measures for territorial redistribution of water resources. It is planned to complete the construction of the first stage of the diversion of part of the water from northern rivers and lakes into the Volga basin in a volume of 5.8 cubic kilometers a year, and to construct the Volga-Don, Rostov-Krasnodar, and Volga-Chogray canals for transferring this water from the Volga into the basins of the Don, Kuban and Terek rivers. Implementing these measures will make it possible to create in the lower Volga area and the Northern Caucasus large new irrigated areas. In order to solve the problem of water supply for the south of the Ukraine and Moldavia it is intended to complete the construction of a hydraulic unit in the Dnepr-Bug estuary and to begin construction of the water management complex of the Danube-Dnepr and the Danube-Nisporeny Canal. The program earmarks beginning the development of the plan for the construction of the Siberian-Central Asian Canal.

The Long-Term Program envisions: providing in 1986-1990 through state capital investments for the introduction of 3.4 million hectares of irrigated land, and 3.6 million hectares of drained land; 15,850 kilometers of main pipelines for agricultural purposes; by the year 2000, expansion of the area of irrigated land to 30-32 million hectares and drained land--to 19-21 million hectares, that is, increasing the currently existing land reclamation fund by 16-20 million hectares.

The kolkhozes, sovkhoses and interfarm associations should expand the areas of land which are irrigated with local water, underground water and catchwork irrigation.

Under the 12th Five-Year Plan it is intended to conduct work for technical improvement of the condition of existing land reclamation systems on an area of 5.55 million hectares, and also to do amelioration work on area of 8.3 million hectares that do not require draining.

For implementation of the land reclamation program under the 12th Five-Year Plan capital investments have been allotted in a volume of 50.4 billion rubles as compared to the expected fulfillment of the plan for 44.3 billion rubles under the current five-year plan. The increase in capital investments for land reclamation work will amount to 14.4 percent, and for organizations under union jurisdiction of the USSR Ministry of Water Management--15.4 percent, which is almost twice as much as in the branch of agriculture as a whole.

It was noted at the plenum that in land reclamation construction there has been a dispersion of capital investments, normative time periods for construction have not been maintained, volumes of work for technical improvement of existing land reclamation systems are increasing, and the agricultural building up of newly assimilated reclaimed land is in arrears. Therefore a task was set to increase the return on capital investments and reduce the amount of time necessary for recouping them.

In order to increase the effectiveness of land reclamation construction and achieve a greater return from each hectare of rejuvenated land, and this the



main thing, the long-term program envisions comprehensive development of land reclamation, that is, in addition to construction of land reclamation systems, the necessary production and social infrastructure are to be created.

For irrigated and drained land it is necessary to provide the full measure of fertilizers, technical equipment, chemical means of plant protection--everything necessary for effective utilization of land reclamation systems, and also to create housing and cultural-domestic conditions for the land reclamation workers.

Workers of planning and economic agencies must take this into account when working on the draft of the plan for the 12th Five-Year Plan and drawing up the title lists for construction projects, keeping in mind concentration of capital investments, material and technical resources and labor resources on start-up projects and comprehensive building up of the facilities, and they must not allow deviations from the approved plans, cost overruns as compared to the envisioned estimates, and they must reduce the volumes of incomplete construction.

The decisions of the October Plenum of the CPSU Central Committee require that the USSR Gosplan and the ministries and departments take a qualitatively new approach to such issues as land reclamation, agricultural machine building, and the production of mineral fertilizers and chemical products.

The USSR Gosplan, the USSR Gosstab and the ministries of machine building, the chemical, energy and other branches of industry have been instructed to provide for the delivery of machines, materials and equipment of high quality and durability, strictly in keeping with the program that has been developed, and to step up the work for creating better, highly productive and economical earth-moving and land reclamation equipment, instruments, means of mechanization and telemechanization of water management facilities and machines and equipment that are especially intended for repair and operation of land reclamation systems, and they are also to accelerate the assimilation of their series production.

In 1986--1990, in keeping with the long-term program, it is intended to deliver to water management organizations 35,000 excavators, 32,000 bulldozers, 10,000 tractors of the K-700 type and 4,400 tractors of the class for pulling a load of 10 tons and more, nontrench drain layers and looseners for T-330 tractors, and they are also to develop designs for 33 new highly productive machines for construction and operation of land reclamation systems.

In order to provide, beginning in 1976, for the production of a new land reclamation chassis, in the annual plans it is necessary to envision allotting to the Ministry of Construction, Road and Municipal Machine Building the necessary quantity of tractors of the K-701 type from funds allotted for these tractors to water management organizations.

The fulfillment of the earmarked volumes of land reclamation construction under the 12th Five-Year Plan will require a considerable increase in the deliveries of steel, iron and nonmetal pipes. According to preliminary

calculations, the volumes of consumption of pipes under the 12th Five-Year Plan as compared to the existing level under the current five-year plan will increase by no less than 13 percent and in 1990 will amount to about 2.2 million tons as compared to 1.9 million in 1985. Consequently, in addition to increasing resources, and improving the quality and effectiveness of the utilization of metal pipes, it is important to increase the volumes of production and application in land reclamation construction of asbestos cement, plastic and other kinds of pipes.

The Long-Term Program for Land Reclamation envisions for the development of capacities for producing polymer drainage pipes, whose output is to be increased to 180,000 tons a year by 1990, for which it will be necessary to envision allotting the necessary quantity of polymer raw material.

One of the important assignments of the Long-Term Program for Land Reclamation is elimination of the shortcomings and omissions in the operation of the land reclamation systems that have already been created and the introduction of progressive technologies for cultivating agricultural crops on irrigated and drained lands. This must be given priority since the effectiveness of the reclaimed lands is still not sufficiently high.

Considerable areas of them become unsuitable because of incorrect use. During 1981-1983 1,882,000 hectares of new irrigated land were introduced in the country, while the increase in the overall area amounted to only 1,644,000 hectares or 238,000 hectares less. The situation is the same with drained land: 1,500,000 hectares were introduced, but the increase amounted to 287,000 hectares or 213,000 hectares less. There is an especially large disparity between the introduction of new and the increase in existing land reclamation areas in the RSFSR--148,000 hectares of irrigated and 156,000 hectares of drained land; in the Ukrainian SSR--55,000 hectares of irrigated land; in the Kazakh SSR--28,000 hectares of irrigated land; and in the Lithuanian SSR--34,000 hectares of drained land.

A great deal of attention is being devoted to questions of preserving the fund of reclaimed land. In recent years there have been cases of using irrigated and drained land for nonagricultural purposes.

Special attention was devoted to the problem of increasing the productivity of reclaimed land at the October Plenum of the CPSU Central Committee. The return from the reclaimed hectare, in which immense funds have been invested, should be appreciable, and should provide for an additional quantity of agricultural products. But the planned productivity is achieved only on one-third of the irrigated area in the country. Thus one-fifth of the farms in the Nonchernozem Zone of the RSFSR thresh only up to 12 quintals of grain crops per hectare. The situation is the same with respect to the productivity of cotton in Central Asia. One cannot be satisfied today with the economic indicators of the work on reclaimed land either, where the output-capital ratio during 1976-1982 dropped by 33 percent and in 1982 amounted to 41 kopecks per 1 ruble of capital.

In his report the chairman of the USSR Council of Ministers, N. A. Tikhonov, noted that the low productivity on improved lands is, as a rule, the result of

inefficiency, slow introduction of industrial technologies and highly productive strains and hybrids of agricultural crops, poor utilization of mineral fertilizers and technical equipment, and unsatisfactory organization of watering on irrigated land.

Therefore the attention of the ministries, departments and councils of ministers of the union republics, local party, soviet and management agencies, and managers and specialists of the farms is directed toward more extensive dissemination of the experience of the leading farms, brigades and teams which are constantly achieving high indicators in the utilization of reclaimed land.

Large yields are being raised on this land by workers of the Kolkhoz imeni N. K. Krupskaya in Crimea Oblast, imeni Tatarbunarskoye Vosstaniye in Odessa Oblast, imeni Shumakov in the Altay, Osnezhitskiy in Brest Oblast, and many other farms.

At the Plenum of the Party Central Committee a number of oblasts were criticized for inefficient utilization of reclaimed land, for example, Kalinin Oblast, where the majority of the farms do not receive the proper return from the funds invested in land reclamation. At the same time the work experience of certain kolkhozes and sovkhozes in this oblast convincingly prove that here it is possible to achieve extremely high indicators.

On the Kolkhoz imeni M. I. Kalinin in Kalininskiy Rayon (chairman--Deputy of the USSR Supreme Soviet, K. A. Polaznov) every third hectare has been reclaimed. More than half of the area has been drained by closed drainage.

Along with the planned new land reclamation construction here, they are constantly checking on the condition of the existing land reclamation systems. Repair workers have been assigned to each section of open network and each hydrotechnical installation.

Because of the application of a scientifically substantiated system of farming on improved lands in the introduction of highly productive strains of agricultural crops and progressive forms of labor organization for the farmers, the gross yields of crop-growing products on the kolkhoz have increased by one-third since the beginning of the current five-year plan. They thresh more than 28 quintals of grain per hectare, harvest 152 quintals of early strains of potatoes, and procure 71 quintals per hectare of hay from perennial grasses.

For this year's wintering they have prepared 24 quintals of feed units per conventional head of cattle and a sufficient quantity of haylage and silage. The milk yield per cow has increased from 2,944 kilograms in 1981 to 4,001 in 1983.

The increased productivity of the fields and the productivity of animal husbandry have a favorable effect on the economics of production. From year to year the net income increases and production costs decrease. A quintal of milk, for example, now costs the farm 4 rubles less, and a quintal of meat more than 20 rubles less than they did 2 or 3 years ago.

Effective utilization of reclaimed land for purposes of steadily increasing the food supply was declared by the October (1984) Plenum of the CPSU Central Committee to be a matter of primary importance for all party, soviet and management agencies, ministries and departments, and labor collectives of the kolkhozes and sovkhozes.

The center of the organizational work should now be shifted directly to the teams, brigades, sections, divisions and farms. They should be constantly interested in obtaining a good yield. We should extensively and skillfully utilize the collective contract, piece-rate-plus-bonus system of wages, intrafarm accounting, incentive funds of the enterprise and other instruments of the planning and economic mechanism. It is necessary to provide for guaranteed allotment to the contracting teams and brigades of high-quality seeds, fertilizers, means of plant protection, technical equipment, and also prompt delivery of water, taking into account the earmarked productivity.

An important factor in increasing the effectiveness of land reclamation, increasing labor productivity, and efficiently utilizing water and land resources is acceleration of scientific and technical progress along with the introduction of advanced domestic and foreign experience.

In the next 20 years agricultural and water management agencies as well as scientific research institutions will have to considerably expand the area of application of the more progressive energy- and water-saving methods of irrigation such as drop and aerosol irrigation, permanent small-dispersion sprinkling and so forth, and scientific research on designing better machines for irrigation farming should be stepped up. There should be mass application of wide-grasp sprinkling machines, and in the overmoist zone there should be extensive construction of polder and drainage-watering systems.

In order to further raise the level of utilization of reclaimed land and achieve the goals earmarked in the program, it is necessary to improve the interrelations between agricultural and water management agencies, kolkhozes, sovkhozes and operations services.

In order to solve the problems associated with the long-term program for land reclamation, the USSR Council of Ministers adopted the decrees, "On Measures for Providing for Highly Effective Utilization of Reclaimed Land on the Kolkhozes, Sovkhozes and Other Agricultural Enterprises" and "On Transferring Intrafarm Land Reclamation Systems from the Books of the Kolkhozes, Sovkhozes and Other State Agricultural Enterprises to the Books of State Operational Water Management Organizations."

It is stipulated that reclaimed land should be used for raising agricultural crops on the basis of agreements concluded between the farms and enterprises and organizations that provide their production service. Moreover the agreements for highly effective utilization of reclaimed land are to be registered in the rayon agroindustrial association (RAPO). For achieving the planned productivity on reclaimed land bonuses will be awarded to managers and specialists of the kolkhozes and service enterprises in amounts equal to as much as the salary for 4 months. It has been established that people who are



to blame for failure to fulfill commitments under agreements are deprived of part or all of their bonuses for the results of their work during the year.

When contractual commitments are not fulfilled by water management, repair-construction and operations enterprises, associations of Sel'khoztekhnika or enterprises of Sel'khozkhimiya which have concluded agreements with kolkhozes, sovkhozes and other agricultural enterprises for highly effective utilization of reclaimed land, deductions into their material incentive funds are made in reduced amounts.

Property liability is established for the partners for violation of contractual commitments. The kolkhozes and sovkhozes, if they are to blame for the failure to obtain the proper harvest, deposit into the RAPO account a sum equal to the value of the products that were not obtained according to procurement prices, and if the shortage in the yield is the fault of the service enterprises they pay the farms the value of the shortage resulting from their violation of contractual commitments, calculated in state procurement prices.

Thus the measures that have been taken are good. But in order for them to be effective it is necessary to have constant control over their practical application as well as organizational and planning-economic work and systematic analysis of the condition of economic interrelations between the kolkhozes and sovkhozes, on the one hand, the other branches of the national economy, on the other.

Improvement of the operation of land reclamation systems and increased effectiveness of the utilization of irrigated and drained land will also be promoted by the transfer in 1986-1990 of the intrafarm irrigation, drainage, collector-drainage network, hydrotechnical installations, electric pumping stations and vertical drainage wells (in good condition) from the books of the kolkhozes, sovkhozes and other state and agricultural enterprises (with their agreement) to the books of state operations water management organizations with the financing of expenditures for their maintenance and repair in the amount of 30 percent from funds envisioned in the state budget for operational expenditures and 70 percent--from the funds of the kolkhozes, sovkhozes and other state agricultural enterprises.

But it is stipulated that the amounts of shared participation of the budget in the expenditures for the maintenance and repair of the facilities will be differentiated depending on the level of profitability of the farms that are transferring the facilities, within the limits of the overall sum of funds allotted by the state. For less profitable farms and those that are operating at a loss it is permitted to retain during 1986-1990 the policy of financing expenditures for the maintenance of interfarm land reclamation systems and structures which was established previously for individual regions of the country.

In keeping with the requirement of USSR legislation for the protection of nature, all land reclamation plans include a section for environmental protection measures, an ecological expert evaluation is carried out for the plans, and designs are drawn up for comprehensive utilization and protection



of water and land resources. Observance of this legislation should become a vital rule, a matter of honor for everyone who is entrusted with transforming the land through land reclamation in the interests of further increasing the well-being of the Soviet people.

As Comrade K. U. Chernenko noted in his speech at the Plenum of the CPSU Central Committee, one of nature's great gifts is the forest, which plays an immense role in protecting water and land resources and in improving the environment. Therefore forestry and agricultural agencies are faced with the task of taking a thrifty attitude toward the forest, utilizing forestry products efficiently, and restoring forests at more rapid rates. In the arid zones of the country we should more extensively utilize field protection forest cultivation for reducing the fatal influence of the winds on the preservation of moisture in the soil and also for preventing soil erosion.

When speaking about land reclamation as a source of increasing the production of agricultural products one should not forget about water--that valuable gift of nature. Water, like land and air, is a most important component of our planet's ecological system. At the Plenum of the CPSU Central Committee a warning was given that when we intrude into nature and transform the land we not only must not cause harm to it, but must improve and enrich it and, in the words of K. Marx, like good fathers, leave it in better condition for future generations.<sup>2</sup>

Our country has all the necessary conditions for this. And the main thing is that they be created for those who are directly involved with the land--the agricultural workers. In recent years extremely positive changes have been achieved in their life. The social transformation of rural areas is continuing. Tasks of the long-term program for land reclamation are also directed toward this. At the October (1984) Plenum of the Party Central Committee an appeal was heard to publicize the affairs of agricultural workers more completely and more clearly, and to raise the prestige of their difficult, but highly noble labor. The Presidium of the USSR Supreme Soviet instituted an honorary title, "Honored Land Reclamation Worker of the USSR." This is a token of respect for the love of labor of those who are making our restored land truly fruitful.

The implementation of the Long-Term Program for Land Reclamation places important tasks before planning agencies. A great deal of responsibility has been placed on the workers of the USSR Gosplan and the Gosplans of the union republics. For successful implementation of the immense program for transformation of the land will depend largely on the degree to which the requirements set at the October (1984) Plenum of the Party Central Committee are taken into account in plans and on the monitoring of the implementation of all that has been earmarked.

It is the duty of workers of the agroindustrial complex to respond to the party's concern with concrete deeds, to do everything possible so that land reclamation everywhere will become a reliable, stable basis for the most rapid changeover of farming to a more intensive path of development, the

strengthening of the feed base for animal husbandry, increased production of grain, potatoes, vegetables, meat, milk and other agricultural products, and a stable increase of the food supply.

#### FOOTNOTES

1. "Materials of the Plenum of the CPSU Central Committee of 23 October 1984," Moscow, Politizdat, 1984, p 7.
2. See: K. Marx and F. Engels, "Soch." [Works], vol 25, part II, p 337.

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